L22 9 S L16 AND L20

FILE 'REGISTRY' ENTERED AT 12:45:06 ON 02 AUG 2007
L23 76956 S BA/ELS NOT C/ELS

FILE 'HCA' ENTERED AT 13:04:24 ON 02 AUG 2007
L24 271959 S L23
L25 120 S L8 AND L24 AND L13
L26 24 S L25 AND L14
L27 26 S L25 AND L15
L28 8 S (L26 OR L27) AND L20
L29 19 S L25 AND L20
L30 20 S L18 OR L21 OR L22 OR L28
L31 16 S (L17 OR L29) NOT L30
L32 16 S (L26 OR L27) NOT (L30 OR L31)
L33 19 S 1840-2004/PY,PRY AND L30
L34 15 S 1840-2004/PY,PRY AND L31
L35 14 S 1840-2004/PY,PRY AND L32

=> FILE HCA
FILE 'HCA' ENTERED AT 13:14:26 ON 02 AUG 2007

=> D L33 1-19 BIB ABS HITSTR HITIND

L33 ANSWER 1 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 144:401663 HCA Full-text
TI Nanostructured coating and coating method
IN Valle, Karine; Belleville, Philippe; Wittmann-Teneze, Karine; Bianchi, Luc; Blein, Franck
PA Commissariat a l'Energie Atomique, Fr.
SO PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DT Patent
LA French
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006043006	A1	20060427	WO 2005-FR50870	

PI WO 2006043006

200510
20
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

FR 2877015 A1 20060428 FR 2004-52390
200410
21

EP 1802783 A1 20070704 EP 2005-815486
200510
20
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R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR

PRAI FR 2004-52390 A 20041021 <--
WO 2005-FR50870 W 20051020

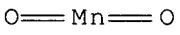
AB The invention relates to a method for coating a surface with nanoparticles, to a nanostructured coating that can be obtained by using this method, and to a device for carrying out the inventive method. The method is characterized in that it involves an injection of a colloidal sol of these nanoparticles into a plasma jet that projects these onto the surface. The device comprises plasma torch, at least one reservoir contg. the colloidal sol of nanoparticles; a device for fixing and displacing the substrate (S), and; an injection system for injecting the colloidal sol into the plasma jet of the plasma torch. The invention can be used in optical, electronic, and energy (**battery**, thermal barrier) devices comprising a nanostructured coating that can be obtained by using the aforementioned method.

IT **1304-28-5P**, Barium oxide, properties **1313-13-9P**, Manganese oxide (**MnO2**), properties **13463-67-7P**, **Titanium oxide** (**TiO2**), properties
(nanostructured coating and coating method)

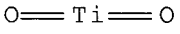
RN 1304-28-5 HCA

CN Barium oxide (BaO) (CA INDEX NAME)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 66, 73, 76
IT Coating materials
Coating process
Colloids
Doping
Electric apparatus
Jets
Nanoparticles
Nanostructures
Optical instruments
Plasma
Primary **batteries**
Secondary **batteries**
Semiconductor devices
Sol-gel processing
Sols
(nanostructured coating and coating method)
IT **1304-28-5P**, Barium oxide, properties 1306-38-3P, Cerium oxide (CeO2), properties 1308-04-9P, Cobalt oxide (Co2O3) 1308-38-9P, Chromia, properties 1309-37-1P, Iron oxide (Fe2O3), properties 1309-48-4P, Magnesium oxide (MgO), properties 1312-43-2P, Indium oxide (In2O3) **1313-13-9P**, Manganese oxide (**MnO2**), properties 1313-96-8P, Niobium oxide (Nb2O5) 1313-99-1P, Nickel oxide, properties 1314-08-5P, Palladium oxide 1314-13-2P, Zinc oxide (ZnO), properties 1314-20-1P, Thoria, properties 1314-23-4P, Zirconium oxide (ZrO2), properties 1314-35-8P, Tungsten oxide (WO3), properties 1314-36-9P, Yttrium oxide (Y2O3), properties 1314-61-0P, Tantalum oxide (Ta2O5) 1314-62-1P, Vanadia, properties 1317-34-6P, Manganese oxide (Mn2O3) 1317-35-7P, Manganese oxide (Mn3O4)

1317-61-9P, Iron oxide (Fe3O4), properties 1332-37-2P, Iron oxide, properties 1335-25-7P, Lead oxide 1344-28-1P, Aluminum oxide (Al2O3), properties 1344-70-3P, Copper oxide 1345-13-7P, Cerium oxide (Ce2O3) 7440-02-0P, Nickel, properties 7440-05-3P, Palladium, properties 7440-06-4P, Platinum, properties 7440-16-6P, Rhodium, properties 7440-18-8P, Ruthenium, properties 7440-22-4P, Silver, properties 7440-57-5P, Gold, properties 7631-86-9P, Silicon oxide(SIO2), properties 11099-11-9P, Vanadium oxide 11104-61-3P, Cobalt oxide 11113-84-1P, Ruthenium oxide 11129-60-5P, Manganese oxide 11129-89-8P, Platinum oxide 12018-34-7P, Chromium oxide (Cr3O4) 12036-10-1P, Ruthenium dioxide 12036-21-4P, Vanadium dioxide 12047-27-7P, Barium titanate(batio3), properties 12055-23-1P, Hafnium oxide (HfO2) 12060-08-1P, Scandium oxide (Sc2O3) 12680-36-3P, Rhodium oxide 12770-85-3P, Europium oxide **13463-67-7P, Titanium oxide (TiO2)**, properties 18282-10-5P, Tin oxide (SnO2) 20667-12-3P, Silver oxide 37303-24-5P, Barium strontium **titanium oxide** ((Ba,Sr)TiO3) 39403-39-9P, Gold oxide 113229-22-4P, Lead titanium zirconium oxide ((Pb,Zr)TiO3) 169767-72-0P, Strontium oxide (Sr2O3)
(nanostructured coating and coating method)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 2 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 144:72309 HCA Full-text
TI Alkaline **dry cells** containing alkaline earth metal (hydr)oxides and suppressing inner pressure rise
IN Yamakawa, Naoko; Takagi, Ryosuke; Yamamoto, Kenta; Enokiya, Tadaki; Tahara, Takumi
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2006004900	A	20060105	JP 2004-237188	200408 17 <--
PRAI JP 2004-150320	A	20040520 <--		

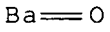
AB The cells, having good leakage resistance and preventing valves from breaking on H(g) evolution, have **MnO2**-based cathode active masses and **Zn**-based **anode** active masses wherein Cu- or Zn alloy-based

current collectors contg. (hydr)oxides of Mg, Ca, Ba, and/or Sr as additives and being coated with 0.050-0.80 μm-thick Sn are equipped. The Sn are formed by electroless plating.

IT **1304-28-5**, Baria, uses **17194-00-2**, Barium hydroxide
(anode additives; alk. **dry cells** contg. alk. earth metal (hydr)oxides and suppressing inner pressure rise and leakage)

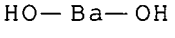
RN 1304-28-5 HCA

CN Barium oxide (BaO) (CA INDEX NAME)



RN 17194-00-2 HCA

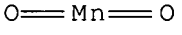
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IT **1313-13-9**, Manganese dioxide, uses
(cathode active mass; alk. **dry cells** contg. alk. earth metal (hydr)oxides and suppressing inner pressure rise and leakage)

RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST hydrogen evolution internal pressure rise prevention **dry cell**; alk earth hydroxide current collector **dry cell**; leakage resistance alk **dry cell** calcia contg; tin coated current collector alk **dry cell**

IT **Dry cell primary batteries**
(alk.; alk. **dry cells** contg. alk. earth metal (hydr)oxides and suppressing inner pressure rise and leakage)

IT **Zinc** alloy, base
(**anode** current collectors; alk. **dry cells** contg. alk. earth metal (hydr)oxides and

suppressing inner pressure rise and leakage)
IT 7440-66-6, **Zinc**, uses
(**anode** active mass; alk. **dry cells**
contg. alk. earth metal (hydr)oxides and suppressing inner
pressure rise and leakage)
IT **1304-28-5**, Baria, uses 1305-62-0, Calcium hydroxide, uses
1305-78-8, Calcia, uses 1309-42-8, Magnesium hydroxide
1309-48-4, Magnesia, uses 1314-11-0, Strontia, uses
17194-00-2, Barium hydroxide 18480-07-4, Strontium
hydroxide
(anode additives; alk. **dry cells** contg. alk.
earth metal (hydr)oxides and suppressing inner pressure rise and
leakage)
IT 7440-50-8, Copper, uses
(anode current collectors; alk. **dry cells**
contg. alk. earth metal (hydr)oxides and suppressing inner
pressure rise and leakage)
IT **1313-13-9**, Manganese dioxide, uses
(cathode active mass; alk. **dry cells** contg.
alk. earth metal (hydr)oxides and suppressing inner pressure rise
and leakage)
IT 7440-31-5, Tin, uses
(current collector plating layers; alk. **dry**
cells contg. alk. earth metal (hydr)oxides and
suppressing inner pressure rise and leakage)

L33 ANSWER 3 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 140:256341 HCA Full-text
TI **Battery** with high electrode interfacial surface area
IN Slezak, Philip J.
PA Eveready Battery Company, Inc., USA
SO U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004058234	A1	20040325	US 2002-251002	200209 20
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US 6869727	B2	20050322		
US 2004058235	A1	20040325	US 2003-376830	200302

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WO 2004027899 A2 20040401 WO 2003-US29360
200309
17

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WO 2004027899 A3 20050324
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

WO 2004027894 A2 20040401 WO 2003-US29436
200309
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WO 2004027894 A3 20041014
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003267282 A1 20040408 AU 2003-267282
200309
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AU 2003270765 A1 20040408 AU 2003-270765
200309
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EP 1540754 A2 20050615 EP 2003-749755
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

EP 1543574 A2 20050622 EP 2003-752476
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CN 1682396 A 20051012 CN 2003-822448
200309
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CN 1695263 A 20051109 CN 2003-822486
200309
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JP 2006500742 T 20060105 JP 2004-537973
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JP 2006500744 T 20060105 JP 2004-538202
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US 2005170246 A1 20050804 US 2005-51313
200502
04
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IN 2005DN00860 A 20070126 IN 2005-DN860
200503
04
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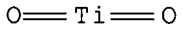
PRAI US 2002-251002 A2 20020920 <--
US 2003-376830 A 20030228 <--
WO 2003-US29360 W 20030917 <--
WO 2003-US29436 W 20030917 <--

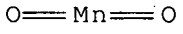
AB An **electrochem. battery cell** in accordance with the invention has a high electrode interfacial surface area to improve high rate discharge capacity, and the shapes of the electrodes facilitate the manuf. of cells of high quality and reliability at high speeds suitable for large scale prodn. The interfacial surfaces of the solid body electrodes have radially extending lobes that increase the interfacial surface area. The lobes do not have sharp corners, and the concave areas formed between the lobes are wide open, to facilitate assembly of the separator and insertion of the other electrode into the concave areas without leaving voids between the separator and either electrode.

IT **13463-67-7**, **Titania**, uses

(Nb-doped; **battery** with high electrode interfacial surface area)
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)

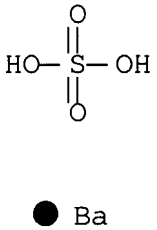


IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(**battery** with high electrode interfacial surface area)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

IT **7727-43-7**, Barium sulfate
(**battery** with high electrode interfacial surface area)
RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



IC ICM H01M004-02
ICS H01M006-08

INCL 429164000; 429209000; 429206000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** high electrode interfacial surface area
IT **Battery** electrodes
Primary **batteries**
Surface area
(**battery** with high electrode interfacial surface area)
IT **13463-67-7**, **Titania**, uses
(Nb-doped; **battery** with high electrode interfacial surface area)
IT 7440-03-1, Niobium, uses
(**TiO2** doped with; **battery** with high electrode interfacial surface area)
IT 1310-58-3, Potassium hydroxide, uses **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(**battery** with high electrode interfacial surface area)
IT **7727-43-7**, Barium sulfate 7782-42-5, Graphite, uses
(**battery** with high electrode interfacial surface area)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 4 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 140:238481 HCA Full-text
TI Lithium vanadium oxide thin-film **battery**
IN Neudecker, Bernd J.; Lanning, Bruce; Benson, Martin H.; Armstrong, Joseph H.
PA USA
SO U.S. Pat. Appl. Publ., 30 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004048157	A1	20040311 <--	US 2002-238905	200209 11
PRAI US 2002-238905		20020911 <--		

AB The manuf. and use of multilayer thin-film **batteries**, such as inverted lithium-free **batteries** is explained. The present invention provides a **battery** that may include a lithium vanadium oxide LixV2Oy ($0<x\leq100$, $0<y\leq5$) pos. cathode or neg. anode. The present invention may also provide for a thin-film **battery** that may be formed on a wide variety of substrate materials and geometries.
IT **7440-39-3**, Barium, uses **7440-66-6**, Zinc, uses
(dopant; lithium vanadium oxide thin-film **battery**)

RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

Ba

RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

IT **1313-13-9**, Manganese dioxide, uses
(lithium vanadium oxide thin-film **battery**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

IC ICM H01M004-48
ICS H01M004-66; B05D005-12
INCL 429231200; 429231500; 429245000; 029623500; 427126300
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium vanadium oxide thin film **battery**
IT Electric arc
(cathodic, deposition; lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(chem.; lithium vanadium oxide thin-film **battery**)
IT Sputtering
(diode, reactive and nonreactive; lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(electron-beam, reactive and nonreactive; lithium vanadium oxide thin-film **battery**)
IT Plasma
(evapn. assisted by; lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(ion plating, plasma assisted; lithium vanadium oxide thin-film

battery)
IT **Battery** anodes
Battery cathodes
Molecular beam epitaxy
Primary **batteries**
(lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(photochem.; lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(plasma, electron-beam directed, reactive and nonreactive; lithium vanadium oxide thin-film **battery**)
IT Alcohols, uses
(polyhydric, support; lithium vanadium oxide thin-film **battery**)
IT Laser radiation
(pulsed, deposition; lithium vanadium oxide thin-film **battery**)
IT Electron beam evaporation
Magnetron sputtering
(reactive and nonreactive; lithium vanadium oxide thin-film **battery**)
IT Ceramics
Semiconductor materials
(support; lithium vanadium oxide thin-film **battery**)
IT Alloys, uses
Glass, uses
Metals, uses
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyimides, uses
Polysiloxanes, uses
Polyurethanes, uses
Rubber, uses
(support; lithium vanadium oxide thin-film **battery**)
IT Evaporation
(thermal, reactive and nonreactive; lithium vanadium oxide thin-film **battery**)
IT Vapor deposition process
(vacuum; lithium vanadium oxide thin-film **battery**)
IT 1344-28-1, Aluminum oxide, uses 7631-86-9, Silica, uses
11104-85-1, Molybdenum silicide 11105-01-4, Silicon nitride oxide
11115-87-0, Hafnium nitride 11116-16-8, Titanium nitride
11116-19-1, Yttrium carbide 11116-21-5, Yttrium nitride
11129-37-6, Hafnium carbide 11130-49-7, Chromium carbide
11130-73-7, Tungsten carbide 12007-23-7, Hafnium boride

12033-62-4, Tantalum nitride (TaN) 12033-89-5, Silicon nitride, uses 12069-94-2, Niobium carbide 12070-08-5, Titanium carbide 12070-10-9, Vanadium carbide (VC) 12070-14-3, Zirconium carbide (ZrC) 12626-44-7, Chromium silicide 12626-91-4, Molybdenum boride 12627-39-3, Tungsten boride 12627-41-7, Tungsten silicide 12627-57-5, Molybdenum carbide 12633-97-5, Aluminum nitride oxide 12648-34-9, Niobium nitride 12653-55-3, Chromium boride 12653-77-9, Niobium boride 12653-85-9, Tantalum boride 12653-88-2, Vanadium boride 12673-91-5, Titanium boride 12674-04-3, Vanadium nitride 12705-37-2, Chromium nitride 12738-91-9, Titanium silicide 12741-10-5, Zirconium boride 24304-00-5, Aluminum nitride 37189-51-8, Zirconium silicide 37245-81-1, Molybdenum nitride 37271-26-4, Titanium nitride oxide 37359-53-8, Tungsten nitride 39336-13-5, Niobium silicide 51680-51-4, Tantalum carbide 52037-56-6, Vanadium silicide 53801-50-6, Yttrium boride 60304-33-8, Hafnium silicide 102427-06-5, Yttrium silicide 107992-37-0, Silicon carbide (Si0-1C0-1) 113443-18-8, Silicon monoxide 119173-61-4, Zirconium nitride 184905-46-2, Lithium nitrogen phosphorus oxide
(barrier layer; lithium vanadium oxide thin-film **battery**
)

IT 7440-50-8, Copper, uses 12054-11-4, Cusn 12597-68-1, Stainless steel, uses 12767-50-9, Phosphor bronze
(current collector; lithium vanadium oxide thin-film **battery**)

IT 7440-44-0, Diamond-like carbon, uses
(diamond-like, barrier layer; lithium vanadium oxide thin-film **battery**)

IT 1333-74-0, Hydrogen, uses 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-09-7, Potassium, uses 7440-17-7, Rubidium, uses 7440-20-2, Scandium, uses 7440-21-3, Silicon, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-25-7, Tantalum, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses **7440-39-3**, Barium, uses 7440-41-7, Beryllium, uses 7440-45-1, Cerium, uses 7440-46-2, Cesium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-58-6, Hafnium, uses 7440-65-5, Yttrium, uses **7440-66-6**, Zinc, uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7723-14-0, Phosphorus, uses
(dopant; lithium vanadium oxide thin-film **battery**)

IT 1314-34-7, Vanadium trioxide 15060-59-0, Lithium vanadium oxide livo3 15593-56-3, Lithium vanadium oxide li3vo4
(lithium vanadium oxide thin-film **battery**)

IT **1313-13-9**, Manganese dioxide, uses 1314-62-1, Vanadium oxide (V2O5), uses 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-42-8, Boron, uses 7440-43-9, Cadmium, uses 7440-57-5, Gold, uses 10045-86-0, Iron phosphate fepo4 11126-15-1, Lithium vanadium oxide 12017-95-7, Chromium lithium manganese oxide CrLiMnO4 12031-65-1, Lithium nickel oxide linio2 12031-95-7, Lithium **titanium oxide** li4ti5o12 12036-21-4, Vanadium oxide vo2 12037-42-2, Vanadium oxide v6o13 12039-13-3, Titanium disulfide 12057-17-9, Lithium manganese oxide limn2o4 12190-79-3, Cobalt lithium oxide colio2 12359-27-2, Vanadyl phosphate 14024-11-4, Aluminum lithium chloride allicl4 15365-14-7, Iron lithium phosphate felipo4 39457-42-6, Lithium manganese oxide 55326-82-4, Lithium titanium sulfide litis2 66102-93-0, Cobalt lithium nitride 83348-01-0, Lithium vanadyl phosphate LiVOPO4 131500-40-8, Tin nitride oxide silicide 144769-06-2, Lead oxide PbO0-2 170171-06-9, Aluminum lithium fluoride allif4 199923-81-4, Aluminum cobalt lithium oxide ((Al,Co)LiO2) 258511-25-0, Lithium manganese nitride 268747-59-7, Chromium manganese oxide Cr0.5Mn0.5O2 371148-86-6, Tin oxide SnO0-2 666836-39-1, Tin nitride (SnN0-1.33) 666836-40-4, Indium nitride (InN0-1) 666836-41-5, Zinc nitride (ZnN0-0.67) 666836-42-6, Copper nitride (CuN0-0.33) 666836-43-7, Nickel nitride (NiN0-0.33) 666836-44-8, Indium oxide (InO0-1.5)
(lithium vanadium oxide thin-film **battery**)

IT 7782-42-5, Graphite, uses
(support; lithium vanadium oxide thin-film **battery**)

IT 7439-93-2, Lithium, processes 7440-62-2, Vanadium, processes 12031-80-0, Lithium oxide li2o2 12057-24-8, Lithium oxide (Li2O), processes 26134-62-3, Lithium nitride (Li3N)
(target material; lithium vanadium oxide thin-film **battery**)

L33 ANSWER 5 OF 19 HCA COPYRIGHT 2007 ACS on STN

AN 140:131020 HCA Full-text

TI Manganese(III) Chemistry in KOH Solutions in the Presence of Bi- or Ba-Containing Compounds and its Implications on the Rechargeability of γ-**MnO2** in Alkaline Cells

AU Im, D.; Manthiram, A.; Coffey, B.

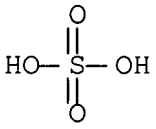
CS Materials Science and Engineering Program, The University of Texas at Austin, Austin, TX, 78712, USA

SO Journal of the Electrochemical Society (**2003**), 150(12), A1651-A1659

CODEN: JESOAN; ISSN: 0013-4651
PB Electrochemical Society
DT Journal
LA English
AB The influence of Bi- or Ba-contg. compds. on the recharge-ability of γ-**MnO2** in alk. electrolytes was studied with AA cells contg. cylindrical cathodes and flooded cells contg. thin-film type cathodes. In addn. to the electrochem. evaluation of the cells, the discharged cathodes were analyzed by x-ray diffraction after washing and drying. The incorporation of bismuth or barium into the cathodes was found to improve the cell cyclability, which is partly due to the suppression of electrochem. inactive phases such as birnessite (δ-**MnO2**) and hausmannite (Mn3O4). Chem. oxidn. reactions of Mn(OH)2 with H2O2 in KOH medium and non-redox reactions of Mn(III) acetate with KOH followed by an anal. of the solid and filtrate indicate that the Mn3+ ions, which were in equil. with the solid phases contg. Mn(III), disproportionated into Mn(II) compds. and Mn(IV) oxides. Reaction mechanisms involving Mn(III) compds. in KOH soln. and the role of bismuth or barium on those reactions are discussed.

IT **17194-00-2**, Barium hydroxide
(composite with **MnO2**/graphite/KOH/PTFE (thin-film cathodes); storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)

IT **7727-43-7**, Barium sulfate
(composite with **MnO2**/graphite/KOH/PTFE (thin-film cathodes); storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)

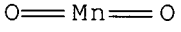


IT **1313-13-9**, Manganese oxide (**MnO2**), uses

(γ-, composite with graphite/KOH/PTFE (thin-film)/optionally Bi and Ba compds.; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72, 75, 76

ST manganese oxide hydroxide secondary **battery** cathode KOH Bi Ba; rechargeable gamma **MnO2** alk cell oxidn potential discharging XRD

IT Electric potential
(charging-discharge capacity-voltage behavior for **battery** cells; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT Fluoropolymers, uses
(composite with **MnO2**/KOH/graphite/optionally and Bi and Ba compds.; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT **Battery** cathodes
(cylindrical and thin-film; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT Oxidation
Redox reaction
Secondary **batteries**
Valence
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT 7782-42-5, Graphite, uses
(composite with **MnO2**/KOH/PTFE (thin-film)/optionally and Bi and Ba compds.; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT 9002-84-0, PTFE
(composite with **MnO2**/KOH/graphite/optionally and Bi and Ba compds.; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT **17194-00-2**, Barium hydroxide
(composite with **MnO2**/graphite/KOH/PTFE (thin-film cathodes); storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 7727-43-7, Barium sulfate
(composite with **MnO2**/graphite/KOH/PTFE (thin-film cathodes); storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 1304-76-3P, Bismuth oxide (Bi2O3), uses
(composite with **MnO2**/graphite/KOH/PTFE (thin-film cathodes); storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 7440-66-6, **Zinc**, uses
(gelled, **anode**; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 1309-55-3, Hausmannite 66701-01-7, Birnessite
(phase in cathode; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 12054-48-7, Nickel hydroxide 55070-72-9, Nickel oxide hydroxide
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 14546-48-6D, Manganese, ion (Mn3+), compds., uses 16397-91-4D, Manganese, ion (Mn2+), compds., uses
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 1310-58-3, Potassium hydroxide (KOH), uses
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 7440-02-0, Nickel, uses 12597-68-1, Stainless steel, uses
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)

IT 18933-05-6, Manganese hydroxide (Mn(OH)2)
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 638-38-0, Manganese acetate 993-02-2, Manganese (III) acetate 7722-84-1, Hydrogen peroxide, reactions
(storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT 12025-99-9, Manganese hydroxide oxide (Mn(OH)O)
(β-, phase formed in cathode; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
IT **1313-13-9**, Manganese oxide (**MnO2**), uses
(γ-, composite with graphite/KOH/PTFE (thin-film)/optionally Bi and Ba compds.; storage effects of manganese(III) chem. in KOH solns. in presence of Bi- or Ba-contg. compds. and implications on recharge-ability of γ-**MnO2** in alk. cells)
RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 6 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 139:122002 HCA Full-text
TI Mediated electrochemical oxidation of destruction of sharps
IN Carson, Roger W.; Bremer, Bruce W.
PA The C & M Group, Llc, USA
SO PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003061714	A2	20030731	WO 2003-US2151	200301 24
			<--	
WO 2003061714	A3	20031113		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ,

TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

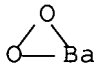
US 2005103642 A1 20050519 US 2004-502439 200407 23 <--

PRAI US 2002-350352P P 20020124 <--
WO 2003-US2151 W 20030124 <--

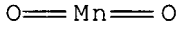
AB A mediated electrochem. oxidn. process is used for sterilization/disinfection of contaminated instruments and infectious waste. Some sharps are decompd. into metallic ions in the anolyte, others are sterilized but not decompd., depending on the type of sharp. Contaminated instruments and wastes, solid or liq., are introduced into an app. for contacting the infectious waste with an electrolyte contg. the oxidized form of one or more reversible redox couples, at least one of which is produced at the anode of an **electrochem. cell.** The oxidized species of the redox couples oxidize the infectious waste mols. and are themselves converted to their reduced form, whereupon they are reoxidized by either of the aforementioned mechanisms and the redox cycle continues until all oxidizable infectious waste species have undergone the desired degree of oxidn. The entire process takes place at temps. between ambient and approx. 100 °C. The oxidn. process will be enhanced by the addn. of reaction enhancements, such as: ultrasonic energy and/or UV radiation.

IT **1304-29-6**, Barium peroxide (Ba(O2)) **1313-13-9**, Manganese oxide (**MnO2**), processes **13463-67-7**, **Titanium oxide (TiO2)**, processes **22541-12-4**, processes
(electrochem. mediator; mediated electrochem. oxidn. of destruction of sharps, adding enhancements such as ultrasonic energy or UV radiation)

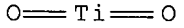
RN 1304-29-6 HCA
CN Barium peroxide (Ba(O2)) (CA INDEX NAME)



RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



RN 22541-12-4 HCA
CN Barium, ion (Ba2+) (CA INDEX NAME)

IT **7440-39-3**, Barium, processes **7440-66-6**, Zinc, processes
(incorporated into isopolyanion mediator; mediated electrochem. oxidn. of destruction of sharps, adding enhancements such as ultrasonic energy or UV radiation)
RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

IC ICM A61L
CC 60-4 (Waste Treatment and Disposal)
Section cross-reference(s): 59
IT 71-47-6, Formate, processes 71-52-3, processes 302-04-5, Thiocyanate, processes 463-79-6, Carbonic acid, processes 563-69-9, Carbonoperoxoic acid 1301-96-8, Silver oxide (AgO) 1303-52-2, Gold hydroxide (Au(OH)3) 1303-58-8, Gold oxide (Au2O3) **1304-29-6**, Barium peroxide (Ba(O2)) 1305-79-9, Calcium peroxide (Ca(O2)) 1306-38-3, Cerium oxide (CeO2), processes 1308-04-9, Cobalt oxide (Co2O3) 1308-14-1, Chromium hydroxide

(Cr(OH)3) 1308-38-9, Chromium oxide (Cr2O3), processes
1309-60-0, Lead oxide (PbO2) 1312-46-5, Iridium oxide (Ir2O3)
1313-13-9, Manganese oxide (**MnO2**), processes
1313-27-5, Molybdenum oxide (MoO3), processes 1313-96-8, Niobium oxide (Nb2O5) 1313-97-9, Neodymium oxide (Nd2O3) 1314-06-3, Nickel oxide (Ni2O3) 1314-15-4, Platinum oxide (PtO2) 1314-18-7, Strontium peroxide (Sr(O2)) 1314-22-3, Zinc peroxide (Zn(O2)) 1314-27-8, Lead oxide (Pb2O3) 1314-32-5, Thallium oxide (Tl2O3) 1314-35-8, Tungsten oxide (WO3), processes 1314-41-6, Lead oxide (Pb3O4) 1314-62-1, Vanadium oxide (V2O5), processes 1317-36-8, Lead oxide (PbO), processes 1317-54-0, Ferrite (ferrospinel) 1344-55-4, **Titanium oxide** peroxide (TiO(O2)), 1344-58-7, Uranium oxide (UO3) 1345-13-7, Cerium oxide (Ce2O3) 2466-09-3, Diphosphoric acid 3812-32-6, Carbonate, processes 7601-90-3, Perchloric acid, processes 7722-86-3, Peroxymonosulfuric acid 7738-94-5, Chromic acid (H2CrO4) 7778-39-4, Arsenic acid (H3AsO4) 7782-68-5, Iodic acid (HIO3) 7782-91-4 7783-03-1 7783-08-6, Selenic acid 7789-31-3, Bromic acid 7790-92-3, Hypochlorous acid 7790-93-4, Chloric acid 10043-35-3, Boric acid (H3BO3), processes 10343-62-1, Metaphosphoric acid (HPO3) 10380-08-2, Triphosphoric acid 11116-47-5, Molybdate 11120-48-2, Telluric acid 12002-97-0, Silver oxide (Ag2O3) 12005-67-3, Americium oxide (AmO2) 12016-80-7, Cobalt hydroxide oxide (Co(OH)O) 12017-00-4, Cobalt oxide (CoO2) 12018-01-8, Chromium oxide (CrO2) 12019-06-6, Copper peroxide 12030-49-8, Iridium oxide (IrO2) 12030-50-1, Iridium oxide (IrO3) 12035-36-8, Nickel oxide (NiO2) 12036-04-3, Palladium oxide (PdO2) 12036-05-4, Praseodymium oxide (PrO2) 12036-10-1, Ruthenium oxide (RuO2) 12036-15-6, Terbium oxide (TbO2) 12036-32-7, Praseodymium oxide (Pr2O3) 12036-35-0, Rhodium oxide (Rh2O3) 12036-36-1, Ruthenium oxide (RuO3) 12036-41-8, Terbium oxide (Tb2O3) 12036-71-4 12048-50-9, Bismuth oxide (BiO2) 12054-72-7 12059-95-9, Plutonium oxide (PuO2) 12060-06-9, Ruthenium oxide (Ru2O3) 12125-54-1 12133-57-2, Cerium oxide (CeO3) 12134-79-1, Germanium hydroxide oxide (Ge(OH)2O) 12135-13-6, Mercury hydroxide (Hg(OH)2) 12135-42-1, Ruthenium hydroxide (Ru(OH)3) 12135-49-8 12137-27-8, Rhodium oxide (RhO2) 12137-44-9, Ruthenium oxide (Ru2O5) 12143-28-1, Polonium oxide (PoO3) 12165-03-6, Plutonium oxide (Pu2O5) 12168-64-8 12179-34-9 12181-34-9 12188-35-1 12254-53-4 12258-53-6 12298-67-8, Mercury peroxide (Hg(O2)) 12298-97-4, Zirconyl ion(2+) 12299-69-3 12299-76-2, Plumbate (Pb(OH)O1-) 12300-16-2 12311-78-3, Plutonium oxide (PuO3) 12323-66-9, Americyl ion(2+) 12401-90-0, Neodymium oxide (NdO2) 12447-33-5 12503-09-2 12529-60-1, Germanate (Ge5(OH)O101-) 12600-79-2, Zirconium oxide (Zr2O5) 12725-92-7, Platinum oxide (Pt2O3)

13444-71-8, Periodic acid (HIO4) **13463-67-7**,
Titanium oxide (TiO2), processes
13470-24-1 13517-11-8, Hypobromous acid 13598-52-2,
Phosphoroperoxoic acid 13813-62-2, Tetraphosphoric acid
13825-81-5, Peroxydiphosphoric acid ([(HO)2P(O)]2O2) 13898-47-0,
Chlorous acid 13907-45-4, Chromate (CrO42-) 13907-47-6, Chromate
(Cr2O72-) 13981-20-9, Vanadate (VO31-) 14066-19-4, processes
14066-20-7, processes 14100-65-3, Borate (BO21-) 14124-67-5,
Selenite 14124-68-6, Selenate 14127-61-8, processes
14213-97-9, Borate (BO33-) 14259-84-8 14265-44-2, Phosphate,
processes 14265-45-3, Sulfite 14280-50-3, processes
14302-87-5, processes 14311-52-5 14332-21-9, Hypoiodous acid
14332-31-1, Niobium hydroxide oxide (Nb(OH)O2) 14333-13-2,
Permanganate (MnO41-) 14333-18-7 14333-21-2 14333-22-3
14343-69-2, Azide 14380-62-2, Hypobromite 14452-57-4, Magnesium
peroxide (Mg(O2)) 14546-48-6, processes 14627-67-9, processes
14701-21-4, processes 14701-22-5, processes 14797-55-8, Nitrate,
processes 14797-65-0, Nitrite, processes 14797-73-0, Perchlorate
14808-79-8, Sulfate, processes 14866-68-3, Chlorate 14901-63-4,
Phosphite 14913-52-1, processes 14996-02-2, processes
14998-27-7, Chlorite 14998-57-3 15046-91-0, processes
15056-35-6, Periodate (IO41-) 15065-65-3, Hypoiodite 15092-81-6,
Peroxydisulfate ((SO3)2O22-) 15158-11-9, processes 15158-12-0,
processes 15391-91-0 15438-31-0, processes 15454-31-6, Iodate
(IO31-) 15541-45-4, Bromate 15543-40-5, processes 15584-04-0,
Arsenate (AsO43-) 15596-54-0 15785-09-8, Cerium hydroxide
(Ce(OH)3) 15845-23-5, Tellurate (TeO42-) 15906-92-0
16065-83-1, processes 16065-84-2, processes 16065-88-6,
processes 16065-89-7, processes 16065-90-0, processes
16065-92-2, processes 16397-91-4, processes 16408-24-5
16469-16-2, Praseodymium hydroxide (Pr(OH)3) 16518-47-1
16637-16-4, Uranyl ion(2+) 16844-87-4 16887-00-6, Chloride,
processes 18252-79-4 18282-10-5, Tin oxide (SnO2) 18923-26-7,
processes 19445-25-1, Perbromic acid 19583-16-5, Cuprate
(CuO21-) 20074-52-6, processes 20334-17-2, processes
20427-56-9 20461-54-5, Iodide, processes 20499-55-2, Iodite
(IO21-) 20561-59-5, processes 20611-56-7, Tungsten hydroxide
oxide peroxide (W(OH)2O(O2)) 20681-14-5, processes 21057-99-8,
Neptunyl ion(1+) 21132-88-7 21563-95-1, Niobate (NbO31-)
21792-06-3, Arsenenate 21879-62-9, processes 22119-26-2
22537-22-0, processes 22537-39-9, processes 22537-50-4,
processes 22537-56-0, processes 22537-58-2, processes
22541-12-4, processes 22541-14-6, processes 22541-20-4,
processes 22541-25-9, processes 22541-44-2, processes
22541-46-4, processes 22541-53-3, processes 22541-58-8,
processes 22541-59-9, processes 22541-60-2, processes

22541-63-5, processes 22541-64-6, processes 22541-70-4, processes 22541-88-4, processes 22542-10-5, processes 22555-00-6, processes 22569-48-8 22840-44-4, Ferrate (Fe(OH)O1-) 22853-00-5, Plutonyl ion(2+) 22878-02-0, Americyl ion(1+) 22890-32-0, Germanate (GeO32-) 22967-56-2, Plutonyl ion(1+) 23078-02-6, Niobium oxide peroxide (NbO2(O2H)) 23689-41-0 23713-49-7, processes 24573-97-5, Chromate (CrO33-) 24959-67-9, Bromide, processes 25141-14-4 26398-91-4, Borate (B2O54-) 26404-66-0, Peroxynitric acid 26450-38-4 27641-41-4, Peroxydicarbonic acid 27805-32-9 30770-97-9, Iodous acid (HIO2) 31865-44-8 34274-25-4 35366-11-1, Argentate (AgO1-)
(electrochem. mediator; mediated electrochem. oxidn. of destruction of sharps, adding enhancements such as ultrasonic energy or UV radiation)

IT 7429-90-5, Aluminum, processes 7439-88-5, Iridium, processes 7439-89-6, Iron, processes 7439-92-1, Lead, processes 7439-93-2, Lithium, processes 7439-95-4, Magnesium, processes 7439-96-5, Manganese, processes 7439-97-6, Mercury, processes 7439-98-7, Molybdenum, processes 7440-02-0, Nickel, processes 7440-03-1, Niobium, processes 7440-04-2, Osmium, processes 7440-05-3, Palladium, processes 7440-06-4, Platinum, processes 7440-09-7, Potassium, processes 7440-15-5, Rhenium, processes 7440-16-6, Rhodium, processes 7440-17-7, Rubidium, processes 7440-18-8, Ruthenium, processes 7440-20-2, Scandium, processes 7440-21-3, Silicon, processes 7440-22-4, Silver, processes 7440-23-5, Sodium, processes 7440-24-6, Strontium, processes 7440-25-7, Tantalum, processes 7440-26-8, Technetium, processes 7440-31-5, Tin, processes 7440-32-6, Titanium, processes 7440-33-7, Tungsten, processes 7440-36-0, Antimony, processes 7440-38-2, Arsenic, processes **7440-39-3**, Barium, processes 7440-41-7, Beryllium, processes 7440-42-8, Boron, processes 7440-43-9, Cadmium, processes 7440-46-2, Cesium, processes 7440-47-3, Chromium, processes 7440-48-4, Cobalt, processes 7440-50-8, Copper, processes 7440-56-4, Germanium, processes 7440-57-5, Gold, processes 7440-58-6, Hafnium, processes 7440-62-2, Vanadium, processes 7440-65-5, Yttrium, processes **7440-66-6**, Zinc, processes 7440-67-7, Zirconium, processes 7440-69-9, Bismuth, processes 7440-70-2, Calcium, processes 7553-56-2, Iodine, processes 7704-34-9, Sulfur, processes 7723-14-0, Phosphorus, processes 7726-95-6, Bromine, processes 7727-37-9, Nitrogen, processes 7782-41-4, Fluorine, processes 7782-49-2, Selenium, processes 7782-50-5, Chlorine, processes 13494-80-9, Tellurium, processes
(incorporated into isopolyanion mediator; mediated electrochem. oxidn. of destruction of sharps, adding enhancements such as ultrasonic energy or UV radiation)

L33 ANSWER 7 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 139:71602 HCA Full-text
TI Additive for alkaline **batteries**
IN Christian, Paul A.; Davis, Stuart M.; Mezini, Tatjana
PA The Gillette Company, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003054988	A2	20030703	WO 2002-US39649	200212 11 <--
WO 2003054988	A3	20040722		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003134199	A1	20030717	US 2001-22272	200112 20 <--
US 6740451	B2	20040525		
AU 2002351363	A1	20030709	AU 2002-351363	200212 11 <--
EP 1466373	A2	20041013	EP 2002-787020	200212 11 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1630957	A	20050622	CN 2002-825471	

200212
11
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JP 2006502528 T 20060119 JP 2003-555606
200212
11
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BR 2002015087 A 20061128 BR 2002-15087
200212
11
<--
PRAI US 2001-22272 A1 20011220 <--
WO 2002-US39649 W 20021211 <--

AB An alk. **battery** includes a cathode including Ni oxyhydroxide and a gold salt, an **anode** including **zinc**, a separator between the cathode and the anode, and an alk. electrolyte. The Ni oxyhydroxide includes β- and γ-Ni oxyhydroxide. Gold salt is selected from Au(III) oxide, Au(III) hydroxide, and Au(III) acetate.

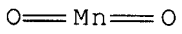
IT **7440-66-6**, Zinc, uses
(additive for alk. **batteries**)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

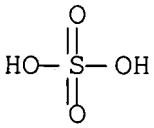
IT **1304-28-5**, Barium oxide (**BaO**), uses
1313-13-9, Manganese dioxide, uses **7727-43-7**,
Barium sulfate **7787-36-2**, Barium permanganate
12047-27-7, Barium **titanium oxide**
batio3, uses **13463-67-7**, **Titania**, uses
13773-23-4, Barium iron oxide bafeo4 **17194-00-2**,
Barium hydroxide
(additive for alk. **batteries**)
RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)

Ba=O

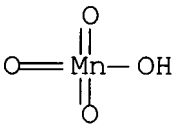
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

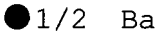


RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)

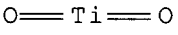


RN 7787-36-2 HCA
CN Permanganic acid (HMnO4), barium salt (8CI, 9CI) (CA INDEX NAME)





RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



RN 13773-23-4 HCA
CN Barium iron oxide (BaFeO4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Ba	1	7440-39-3
Fe	1	7439-89-6

RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)

IC ICM H01M004-52
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** alk electrode additive
IT **Battery** cathodes
Primary **batteries**
(additive for alk. **batteries**)
IT Primary **batteries**
(button-type; additive for alk. **batteries**)
IT 11113-74-9, Nickel hydroxide
(additive for alk. **batteries**)
IT **7440-66-6**, Zinc, uses 55070-72-9, Nickel hydroxide oxide
(additive for alk. **batteries**)
IT 1301-96-8, Silver oxide Ago 1303-52-2, Gold hydroxide au(oh)3
1303-58-8, Gold oxide au2o3 1303-61-3, Gold sulfide au2s3
1304-28-5, Barium oxide (**BaO**), uses 1304-76-3,
Bismuth oxide (Bi2O3), uses 1305-62-0, Calcium hydroxide, uses
1305-78-8, Calcia, uses 1306-19-0, Cadmium oxide (CdO), uses
1306-38-3, Cerium oxide ceo2, uses 1309-42-8, Magnesium hydroxide
1309-48-4, Magnesium oxide (MgO), uses 1309-64-4, Antimony oxide
(Sb2O3), uses 1312-43-2, India **1313-13-9**, Manganese
dioxide, uses 1313-99-1, Nickel oxide (NiO), uses 1314-13-2,
Zinc oxide, uses 1314-37-0, Ytterbia 7440-57-5D, Gold, salt
7446-07-3, Tellurium oxide (TeO2) 7487-88-9, Magnesium sulfate,
uses 7681-52-9, Sodium hypochlorite Naocl 7722-64-7, Potassium
permanganate 7727-21-1, Potassium persulfate **7727-43-7**,
Barium sulfate 7775-27-1, Sodium persulfate 7778-18-9, Calcium
sulfate 7783-98-4, Silver permanganate **7787-36-2**, Barium
permanganate 7789-75-5, Calcium fluoride, uses 7790-75-2,
Calcium tungsten oxide cawo4 12036-44-1, Thulium oxide
12047-27-7, Barium **titanium oxide**
batio3, uses 12049-50-2, Calcium **titanium oxide**
catio3 12060-58-1, Samaria 12060-59-2, Strontium

titanium oxide srtio3 12061-16-4, Erbia
12064-62-9, Gadolinia 12672-51-4, Cobalt hydroxide
13463-67-7, **Titania**, uses **13773-23-4**,
Barium iron oxide bafeo4 14857-02-4, Calcium silicate casi2o5
16469-22-0, Yttrium hydroxide **17194-00-2**, Barium hydroxide
18480-07-4, Strontium hydroxide 20427-58-1, Zinc hydroxide
20548-54-3, Calcium sulfide (CaS) 20667-12-3, Silver oxide (Ag2O)
20731-62-8, Thulium sulfate 51305-35-2, Gold acetate 61701-27-7,
Cobalt hydroxide oxide
(additive for alk. **batteries**)
IT 7440-44-0, Carbon, uses
(conductive; additive for alk. **batteries**)
IT 7429-90-5, Aluminum, uses 7439-96-5, Manganese, uses 7440-22-4,
Silver, uses 7440-48-4, Cobalt, uses
(dopant; additive for alk. **batteries**)

L33 ANSWER 8 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 139:24152 HCA Full-text
TI **Anodic zinc** for use in an alkaline
battery
IN Kainthla, Ramesh C.; Manko, David J.
PA USA
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003113630	A1	20030619	US 2001-6793	200112 06
WO 2003050906	A1	20030619	WO 2002-US29564	200209 18

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,

EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG

AU 2002327651 A1 20030623 AU 2002-327651
200209
18
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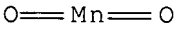
PRAI US 2001-6793 A 20011206 <--
WO 2002-US29564 W 20020918 <--

AB An **anodic zinc** electrode is disclosed for use in an **electrochem. cell** comprising: a current collector; and an active material compn. applied to the current collector, wherein the active material compn. includes Zn and ZnO, and wherein the wt. ratio of the Zn to ZnO ranges from approx. 1-2 to approx. 1 which enables the **anodic zinc** electrode to be assocd. with an **electrochem. cell** assembled in a charged or discharged state.

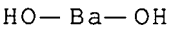
IT **1313-13-9**, Manganese dioxide, uses
(**anodic zinc** for use in alk. **battery**
)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **17194-00-2**, Barium hydroxide
(**anodic zinc** for use in alk. **battery**
)

RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



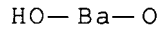
IC ICM H01M004-42
ICS H01M004-62; H01M004-54; H01M004-52
INCL 429231000; 429229000; 429217000; 429059000; 429219000; 429223000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **anodic zinc** alk **battery**
IT **Battery anodes**
Primary **batteries**
Secondary **batteries**
(**anodic zinc** for use in alk. **battery**
)

IT Fluoropolymers, uses

(**anodic zinc** for use in alk. **battery**
)
IT 1310-58-3, Potassium hydroxide (K(OH)), uses 1310-65-2, Lithium hydroxide (Li(OH)) **1313-13-9**, Manganese dioxide, uses 1313-99-1, Nickel oxide, uses 1314-13-2, Zinc oxide (ZnO), uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-66-6, **Zinc**, uses 11113-74-9, Nickel hydroxide 20667-12-3, Silver oxide
(**anodic zinc** for use in alk. **battery**
)
IT 1304-76-3, Bismuth oxide (Bi2O3), uses 1305-62-0, Calcium hydroxide, uses 1306-19-0, Cadmium oxide (CdO), uses 1309-42-8, Magnesium hydroxide 1312-43-2, Indium oxide (In2O3) 1317-36-8, Lead oxide (PbO), uses 9002-84-0, Ptfe 9002-89-5, Polyvinyl alcohol 9004-32-4, Cmc sodium salt 13327-32-7, Beryllium hydroxide **17194-00-2**, Barium hydroxide 18480-07-4, Strontium hydroxide 98966-86-0, Radium hydroxide ra(oh)2
(**anodic zinc** for use in alk. **battery**
)

L33 ANSWER 9 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 137:96217 HCA Full-text
TI Silver Mediation of Fe(VI) Charge Transfer: Activation of the K2FeO4 Super-iron Cathode
AU Licht, Stuart; Naschitz, Vera; Ghosh, Susanta
CS Department of Chemistry and Institute of Catalysis Science, Technion-Israel Institute of Technology, Haifa, 32000, Israel
SO Journal of Physical Chemistry B (**2002**), 106(23), 5947-5955
CODEN: JPCBFK; ISSN: 1089-5647
PB American Chemical Society
DT Journal
LA English
AB An unexpectedly large Ag(II) mediation of Fe(VI) redox chem. improves alk. Fe(VI) cathodic charge transfer. Combined with a **Zn anode**, this results in a cell with 3- to 5-fold higher energy capacity than the conventional high-power Zn/ **MnO2** alk. **battery**, and twice that previously obsd. for Zn/BaFeO4. Both exptl. results and a model of this phenomenon are presented. The Ag(II) salt may be introduced as a simple composite of AgO with the Fe(VI) salt. The Fe(VI) super-iron salt K2FeO4 has a high 3e- intrinsic charge capacity (406 mA/g), and is more environmentally benign than the Fe(VI) salt BaFeO4, but had exhibited comparatively poor charge transfer. Successful AgO cathodic activation of both K2FeO4 and BaFeO4 redox chem. are presented. Various other K2FeO4 activators are also studied. An obsd. interaction of Fe(VI) with Mn(VII/VI) can improve charge efficiency of a K2FeO4 composite with KMnO4 or BaMnO4, albeit not to the extent obsd. in an K2FeO4/AgO composite cathode. The extent of an activation effect of oxides, hydroxides, and titanate salts, as well as KMnO4, BaMnO4, AgMnO4, and fluorinated graphites, on the cathodic discharge of K2FeO4 are probed.
IT **17194-00-2**, Barium hydroxide
(composite cathode contg.; activation of potassium ferrate

super-iron cathode by silver oxide mediation of charge transfer for **batteries**)
RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
ST potassium ferrate cathode activation silver oxide mediation charge transfer; **battery** potassium ferrate cathode activation
IT **Battery** cathodes
Electron transfer
(activation of potassium ferrate super-iron cathode by silver oxide mediation of charge transfer for **batteries**)
IT 13773-23-4, Barium ferrate (BaFeO4)
(activation of barium ferrate cathode by silver oxide mediation of charge transfer for **batteries**)
IT 13718-66-6, Potassium ferrate (K2FeO4)
(activation of potassium ferrate super-iron cathode by silver oxide mediation of charge transfer for **batteries**)
IT 1301-96-8, Silver oxide (AgO)
(activation of potassium ferrate super-iron cathode by silver oxide mediation of charge transfer for **batteries**)
IT 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 7722-64-7, Potassium permanganate 7783-98-4, Silver permanganate (AgMnO4) 7787-35-1, Barium manganese oxide (BaMnO4) **17194-00-2**, Barium hydroxide 21351-79-1, Cesium hydroxide
(composite cathode contg.; activation of potassium ferrate super-iron cathode by silver oxide mediation of charge transfer for **batteries**)
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 10 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 136:21977 HCA Full-text
TI Doped manganese dioxides for use in **battery** electrodes
IN Feddrix, Frank H.; Donne, Scott W.; Devenney, Martin; Gorer, Alexander
PA Eveready Battery Company, Inc., USA
SO PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DT Patent

LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001093348	A2	20011206	WO 2001-US17737	200106 01
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WO 2001093348	A3	20020606		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001065294	A5	20011211	AU 2001-65294	200106 01
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EP 1297581	A2	20030402	EP 2001-939817	200106 01
			<--	
EP 1297581	B1	20050309		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003535013	T	20031125	JP 2002-500465	200106 01
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AT 290721	T	20050315	AT 2001-939817	200106 01
			<--	
US 2003215712	A1	20031120	US 2003-296899	200305 22
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HK 1052082	A1	20050805	HK 2003-104084	200306 10

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PRAI US 2000-208610P P 20000601 <--
WO 2001-US17737 W 20010601 <--

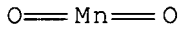
AB This invention relates to **batteries** and, more particularly, to **battery** electrodes comprised of manganese dioxide doped with at least one element. In one aspect, the invention is a doped manganese dioxide useful as an active electrode material in both thin film and cylindrical **batteries.** The doped manganese dioxides provide several potential benefits, including improved electrochem. performance as compared with conventional manganese dioxides. The doped manganese dioxides of this invention comprise manganese, oxygen, and at least one dopant deliberately incorporated into the at. structure of the manganese dioxide. The doped Mn dioxide electrode materials may be produced by a wet chem. method (CMD) or may be prepd. electrolytically (EMD) using a soln. contg. Mn sulfate, H2SO4, and a dopant, in which the dopant is present in an amt. of at least .apprx.25 ppm.

IT **7440-66-6, Zinc**, uses
(**anode** material; doped manganese dioxides for use in **battery** electrodes)

RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

IT **1313-13-9**, Manganese dioxide, uses **378248-77-2**, Barium manganese oxide (Ba0-0.01Mn0.99-1O1.9-2)
(doped manganese dioxides for use in **battery** electrodes)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 378248-77-2 HCA
CN Barium manganese oxide (Ba0-0.01Mn0.99-1O1.9-2) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.9 - 2	17778-80-2
Ba	0 - 0.01	7440-39-3
Mn	0.99 - 1	7439-96-5

IC ICM H01M

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57, 76
ST doping manganese oxide **battery** electrode
IT **Battery** electrodes
Dopants
Doping
Electrodeposition
Primary **batteries**
(doped manganese dioxides for use in **battery** electrodes)
IT Coating process
(plating; doped manganese dioxides for use in **battery** electrodes)
IT **7440-66-6, Zinc**, uses
(**anode** material; doped manganese dioxides for use in **battery** electrodes)
IT 1310-58-3, Potassium hydroxide, uses
(**battery** electrolyte; doped manganese dioxides for use in **battery** electrodes)
IT 7664-93-9, Sulfuric acid, reactions 7785-87-7, Manganese sulfate
(doped manganese dioxides for use in **battery** electrodes)
IT **1313-13-9**, Manganese dioxide, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 378248-51-2, Manganese borate oxide (Mn0.99-1(BO3)0-0.01O1.87-2) 378248-52-3, Magnesium manganese oxide (Mg0-0.01Mn0.99-1O1.9-2) 378248-53-4, Aluminum manganese oxide (Al0-0.01Mn0.99-1O1.9-2) 378248-54-5, Manganese oxide silicate (Mn0.99-1O1.86-2(SiO4)0-0.01) 378248-55-6, Manganese oxide phosphate (Mn0.99-1O1.86-2(PO4)0-0.01) 378248-56-7, Manganese scandium oxide (Mn0.99-1Sc0-0.01O1.9-2) 378248-57-8, Manganese **titanium oxide** (Mn0.99-1Ti0-0.01O1.9-2) 378248-58-9, Manganese vanadium oxide (Mn0.99-1V0-0.01O1.9-2) 378248-59-0, Chromium manganese oxide (Cr0-0.01Mn0.99-1O1.9-2) 378248-60-3, Iron manganese oxide (Fe0-0.01Mn0.99-1O1.9-2) 378248-61-4, Cobalt manganese oxide (Co0-0.01Mn0.99-1O1.9-2) 378248-62-5, Manganese nickel oxide (Mn0.99-1Ni0-0.01O1.9-2) 378248-63-6, Copper manganese oxide (Cu0-0.01Mn0.99-1O1.9-2) 378248-64-7, Manganese zinc oxide (Mn0.99-1Zn0-0.01O1.9-2) 378248-65-8, Gallium manganese oxide (Ga0-0.01Mn0.99-1O1.9-2) 378248-66-9, Germanium manganese oxide (Ge0-0.01Mn0.99-1O1.9-2) 378248-67-0, Manganese strontium oxide (Mn0.99-1Sr0-0.01O1.9-2) 378248-68-1, Manganese yttrium oxide (Mn0.99-1Y0-0.01O1.9-2) 378248-69-2, Manganese zirconium oxide (Mn0.99-1Zr0-0.01O1.9-2) 378248-70-5, Manganese niobium oxide (Mn0.99-1Nb0-0.01O1.9-2) 378248-71-6, Manganese ruthenium oxide (Mn0.99-1Ru0-0.01O1.9-2) 378248-72-7, Manganese rhodium oxide (Mn0.99-1Rh0-0.01O1.9-2)

378248-73-8, Manganese palladium oxide (Mn0.99-1Pd0-0.01O1.9-2)
378248-74-9, Manganese silver oxide (Mn0.99-1Ag0-0.01O1.9-2)
378248-75-0, Indium manganese oxide (In0-0.01Mn0.99-1O1.9-2)
378248-76-1, Manganese tin oxide (Mn0.99-1Sn0-0.01O1.9-2)
378248-77-2, Barium manganese oxide (Ba0-0.01Mn0.99-1O1.9-2)
378248-78-3, Cerium manganese oxide (Ce0-0.01Mn0.99-1O1.9-2)
378248-79-4, Hafnium manganese oxide (Hf0-0.01Mn0.99-1O1.9-2)
378248-80-7, Manganese tantalum oxide (Mn0.99-1Ta0-0.01O1.9-2)
378248-81-8, Manganese rhenium oxide (Mn0.99-1Re0-0.01O1.9-2)
378248-82-9, Manganese osmium oxide (Mn0.99-1Os0-0.01O1.9-2)
378248-83-0, Iridium manganese oxide (Ir0-0.01Mn0.99-1O1.9-2)
378248-84-1, Manganese platinum oxide (Mn0.99-1Pt0-0.01O1.9-2)
378248-85-2, Gold manganese oxide (Au0-0.01Mn0.99-1O1.9-2)
378248-86-3, Bismuth manganese oxide (Bi0-0.01Mn0.99-1O1.9-2)
378248-87-4, Aluminum manganese nickel oxide (Al0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378248-88-5, Manganese nickel borate oxide (Mn0.99-1Ni0-0.01(BO3)0-0.01O1.87-2) 378248-89-6, Manganese zirconium borate oxide (Mn0.99-1Zr0-0.01(BO3)0-0.01O1.87-2)
378248-90-9, Manganese titanium borate oxide (Mn0.99-1Ti0-0.01(BO3)0-0.01O1.87-2) 378248-91-0, Hafnium manganese borate oxide (Hf0-0.01Mn0.99-1(BO3)0-0.01O1.87-2) 378248-92-1, Aluminum manganese tantalum oxide (Al0-0.01Mn0.99-1Ta0-0.01O1.9-2)
378248-93-2, Manganese tantalum borate oxide (Mn0.99-1Ta0-0.01(BO3)0-0.01O1.87-2) 378248-94-3, Manganese niobium borate oxide (Mn0.99-1Nb0-0.01(BO3)0-0.01O1.87-2) 378248-95-4, Aluminum manganese niobium oxide (Al0-0.01Mn0.99-1Nb0-0.01O1.9-2)
378248-96-5, Manganese niobium zirconium oxide (Mn0.99-1Nb0-0.01Zr0-0.01O1.9-2) 378248-97-6, Aluminum manganese zirconium oxide (Al0-0.01Mn0.99-1Zr0-0.01O1.9-2) 378248-98-7, Gallium manganese zirconium oxide (Ga0-0.01Mn0.99-1Zr0-0.01O1.9-2) 378248-99-8, Cerium manganese zirconium oxide (Ce0-0.01Mn0.99-1Zr0-0.01O1.9-2)
378249-00-4, Hafnium manganese zinc oxide (Hf0-0.01Mn0.99-1Zn0-0.01O1.9-2) 378249-01-5, Cerium manganese borate oxide (Ce0-0.01Mn0.99-1(BO3)0-0.01O1.87-2) 378249-02-6, Gallium manganese borate oxide (Ga0-0.01Mn0.99-1(BO3)0-0.01O1.87-2)
378249-03-7, Cerium hafnium manganese oxide (Ce0-0.01Hf0-0.01Mn0.99-1O1.9-2) 378249-04-8, Aluminum manganese borate oxide (Al0-0.01Mn0.99-1(BO3)0-0.01O1.87-2) 378249-05-9, Aluminum gallium manganese oxide (Al0-0.01Ga0-0.01Mn0.99-1O1.9-2) 378249-06-0, Manganese zinc borate oxide (Mn0.99-1Zn0-0.01(BO3)0-0.01O1.87-2)
378249-07-1, Cerium manganese zinc oxide (Ce0-0.01Mn0.99-1Zn0-0.01O1.9-2) 378249-08-2, Cerium gallium manganese oxide (Ce0-0.01Ga0-0.01Mn0.99-1O1.9-2) 378249-09-3, Aluminum hafnium manganese oxide (Al0-0.01Hf0-0.01Mn0.99-1O1.9-2) 378249-10-6, Hafnium manganese zirconium oxide (Hf0-0.01Mn0.99-1Zr0-0.01O1.9-2)
378249-11-7, Manganese zinc zirconium oxide (Mn0.99-1Zn0-0.01Zr0-

0.01O1.9-2) 378249-12-8, Gallium hafnium manganese oxide (Ga0-0.01Hf0-0.01Mn0.99-1O1.9-2) 378249-13-9, Gallium manganese nickel oxide (Ga0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378249-14-0, Manganese nickel zinc oxide (Mn0.99-1Ni0-0.01Zn0-0.01O1.9-2) 378249-15-1, Gallium manganese silver oxide (Ga0-0.01Mn0.99-1Ag0-0.01O1.9-2) 378249-16-2, Indium manganese nickel oxide (In0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378249-17-3, Hafnium manganese nickel oxide (Hf0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378249-18-4, Indium manganese zirconium oxide (In0-0.01Mn0.99-1Zr0-0.01O1.9-2) 378249-19-5, Manganese silver borate oxide (Mn0.99-1Ag0-0.01(BO3)0-0.01O1.87-2) 378249-20-8, Aluminum manganese zinc oxide (Al0-0.01Mn0.99-1Zn0-0.01O1.9-2) 378249-21-9, Gallium manganese zinc oxide (Ga0-0.01Mn0.99-1Zn0-0.01O1.9-2) 378249-22-0, Chromium manganese borate oxide (Cr0-0.01Mn0.99-1(BO3)0-0.01O1.87-2) 378249-23-1, Chromium manganese zinc oxide (Cr0-0.01Mn0.99-1Zn0-0.01O1.9-2) 378249-24-2, Aluminum chromium manganese oxide (Al0-0.01Cr0-0.01Mn0.99-1O1.9-2) 378249-25-3, Chromium indium manganese oxide (Cr0-0.01In0-0.01Mn0.99-1O1.9-2) 378249-26-4, Chromium gallium manganese oxide (Cr0-0.01Ga0-0.01Mn0.99-1O1.9-2) 378249-27-5, Chromium hafnium manganese oxide (Cr0-0.01Hf0-0.01Mn0.99-1O1.9-2) 378249-28-6, Manganese nickel silver oxide (Mn0.99-1Ni0-0.01Ag0-0.01O1.9-2) 378249-29-7, Aluminum manganese silver oxide (Al0-0.01Mn0.99-1Ag0-0.01O1.9-2) 378249-30-0, Chromium manganese silver oxide (Cr0-0.01Mn0.99-1Ag0-0.01O1.9-2) 378249-31-1, Cerium chromium manganese oxide (Ce0-0.01Cr0-0.01Mn0.99-1O1.9-2) 378249-32-2, Chromium manganese zirconium oxide (Cr0-0.01Mn0.99-1Zr0-0.01O1.9-2) 378249-33-3, Manganese silver zirconium oxide (Mn0.99-1Ag0-0.01Zr0-0.01O1.9-2) 378249-34-4, Cerium manganese silver oxide (Ce0-0.01Mn0.99-1Ag0-0.01O1.9-2) 378249-35-5, Chromium copper manganese oxide (Cr0-0.01Cu0-0.01Mn0.99-1O1.9-2) 378249-36-6, Copper manganese zirconium oxide (Cu0-0.01Mn0.99-1Zr0-0.01O1.9-2) 378249-37-7, Hafnium manganese silver oxide (Hf0-0.01Mn0.99-1Ag0-0.01O1.9-2) 378249-38-8, Manganese silver zinc oxide (Mn0.99-1Ag0-0.01Zn0-0.01O1.9-2) 378249-39-9, Manganese ruthenium zirconium oxide (Mn0.99-1Ru0-0.01Zr0-0.01O1.9-2) 378249-40-2, Cerium manganese ruthenium oxide (Ce0-0.01Mn0.99-1Ru0-0.01O1.9-2) 378249-41-3, Hafnium manganese ruthenium oxide (Hf0-0.01Mn0.99-1Ru0-0.01O1.9-2) 378249-42-4, Aluminum manganese ruthenium oxide (Al0-0.01Mn0.99-1Ru0-0.01O1.9-2) 378249-43-5 378249-44-6, Aluminum cerium manganese **titanium oxide** (Al0-0.01Ce0-0.01Mn0.99-1Ti0-0.01O1.9-2) 378249-45-7 378249-46-8, Aluminum manganese nickel **titanium oxide** (Al0-0.01Mn0.99-1Ni0-0.01Ti0-0.01O1.9-2) 378249-47-9, Aluminum cerium manganese nickel oxide (Al0-0.01Ce0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378249-49-1 378249-50-4, Hafnium manganese nickel zirconium oxide

(Hf0-0.01Mn0.99-1Ni0-0.01Zr0-0.01O1.9-2) 378249-51-5, Hafnium manganese zinc zirconium oxide (Hf0-0.01Mn0.99-1Zn0-0.01Zr0-0.01O1.9-2) 378249-52-6 378249-53-7 378249-54-8 378253-12-4, Antimony manganese oxide (Sb0-0.01Mn0.99-1O1.9-2) 378253-13-5, Chromium manganese nickel oxide (Cr0-0.01Mn0.99-1Ni0-0.01O1.9-2) 378253-14-6, Cerium manganese nickel **titanium oxide** (Ce0-0.01Mn0.99-1Ni0-0.01Ti0-0.01O1.9-2)
(doped manganese dioxides for use in **battery** electrodes)

L33 ANSWER 11 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 134:59131 HCA Full-text
TI Performance enhancing additives for **batteries**
IN Jin, Zhihong; Kennedy, John H.
PA Eveready Battery Company, Inc., USA
SO PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000079622	A1	20001228	WO 2000-US17561	200006 21 <--

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1194965	A1	20020410	EP 2000-941732	200006 21 <--
EP 1194965	B1	20030903		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2003502825	T	20030121	JP 2001-505086	200006 21

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AT 249101 T 20030915 AT 2000-941732
200006
21
<--
US 6818347 B1 20041116 US 2001-787858
200103
22
<--
PRAI US 1999-140590P P 19990623 <--
US 2000-212295P P 20000617 <--
WO 2000-US17561 W 20000621 <--

AB Alk. **battery** cells comprising an anode, a cathode, a separator between the anode and the cathode, and an electrolyte are provided with an n-type metal oxide additive that improves electrochem. performance. The n-type metal oxide additive is either a doped metal oxide comprising a metal oxide modified by incorporation of a dopant, or a reduced metal oxide. The metal oxide may be selected from the group consisting of BaTiO3, K2TiO3, CoTiO3, SrTiO3, CaTiO3, MgTiO3, SiO2, CaO, **TiO2**, CoO, Co3O4, ZnO, SnO, SnO2, PbO2, Bi2O3, Bi2O3.3ZrO3, Bi12TiO20, Fe2O3- **TiO2**, Nb2O5, CaWO4, ZnMn2O4, and K2Cr2O7. Examples of dopant disclosed are: NbO2, Nb2O5, Ta2O5, WO3, GeO2, ZrO2, SnO2, ThO2, Fe2O3, In2O3, LiNiO2, and P2O5, In2O3, Sb2O5.

IT **1313-13-9**, Manganese dioxide, uses
(performance enhancing additives for **batteries**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

IT **12047-27-7**, Barium **titanium oxide**
batio3, uses **13463-67-7**, **Titania**, uses
(performance enhancing additives for **batteries**)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)

O=Ti=O

IT **7440-66-6**, Zinc, uses
(performance enhancing additives for **batteries**)
RN 7440-66-6 HCA

CN Zinc (CA INDEX NAME)

Zn

IC ICM H01M004-62
ICS H01M006-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** performance enhancing additive metal oxide
IT **Battery** anodes
Battery cathodes
Primary **batteries**
(performance enhancing additives for **batteries**)
IT Oxides (inorganic), uses
(performance enhancing additives for **batteries**)
IT **1313-13-9**, Manganese dioxide, uses
(performance enhancing additives for **batteries**)
IT 1304-76-3, Bismuth oxide bi2o3, uses 1305-78-8, Calcia, uses
1307-96-6, Cobalt oxide coo, uses 1308-06-1, Cobalt oxide co3o4
1309-60-0, Lead dioxide 1313-96-8, Niobia 1314-13-2, Zinc oxide
zno, uses 7631-86-9, Silica, uses 7778-50-9, Potassium
dichromate 7790-75-2, Calcium tungstate cawo4 12017-01-5, Cobalt
titanium oxide cotio3 12023-27-7, Iron
titanium oxide (Fe2TiO5) 12030-97-6, Potassium
titanium oxide k2tio3 12032-30-3, Magnesium
titanium oxide mgtio3 12032-94-9, Zinc manganese
oxide ZnMn2O4 **12047-27-7**, Barium **titanium**
oxide batio3, uses 12048-52-1, Bismuth zirconium oxide
Bi2Zr3O9 12049-50-2, Calcium **titanium oxide**
catio3 12060-59-2, Strontium **titanium oxide**
srtio3 12441-73-5, Bismuth **titanium oxide**
Bi12TiO20 **13463-67-7**, **Titania**, uses
18282-10-5, Tin dioxide 21651-19-4, Tin oxide sno
(performance enhancing additives for **batteries**)
IT 1309-37-1, Ferric oxide, uses 1310-53-8, Germania, uses
1310-58-3, Potassium hydroxide (K(OH)), uses 1312-43-2, Indium
oxide in2o3 1314-20-1, Thoria, uses 1314-23-4, Zirconia, uses
1314-35-8, Tungsten trioxide, uses 1314-56-3, Phosphorus
pentoxide, uses 1314-61-0, Tantalum pentoxide **7440-66-6**,
Zinc, uses 12031-65-1, Lithium nickel oxide linio2
(performance enhancing additives for **batteries**)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 12 OF 19 HCA COPYRIGHT 2007 ACS on STN

AN 132:336928 HCA Full-text
TI Alkaline zinc-manganese dioxide **battery** with electrode active material including barium compound as additive
IN Bennett, Wayne B.; Lubin, Donna L.
PA Eveready Battery Company, Inc., USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000030198	A1	20000525	WO 1999-US26814	199911 12 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6203943	B1	20010320	US 1998-192251	199811 13 <--
CA 2351089	A1	20000525	CA 1999-2351089	199911 12 <--
EP 1138095	A1	20011004	EP 1999-958931	199911 12 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002530815	T	20020917	JP 2000-583107	199911 12 <--
PRAI US 1998-192251	A	19981113 <--		
US 1999-412735	A	19991004 <--		

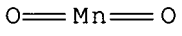
WO 1999-US26814 W 19991112 <--

AB An **electrochem. cell** has an anode, a cathode and an electrolyte, the anode and optionally the cathode comprising a barium compd. such as **BaSO4** or **Ba(OH) 2** as an additive. Alternatively, the cathode comprises **Ba(OH)2** as an additive. The anode comprises an anode active material such as zinc, and the cathode comprises a cathode active material such as manganese dioxide, preferably electrolytic manganese dioxide. Also provided is a method of treating active material by mixing with the barium compd. additive and drying the mixt. The anode and cathode are particularly adapted for use in an **electrochem. cell** having an alk. electrolyte. The barium compd. additive provides improved service performance for the cell.

IT **1313-13-9**, Manganese dioxide, uses
(alk. zinc-manganese dioxide **battery** with electrode active material including barium compd. as additive)

RN 1313-13-9 HCA

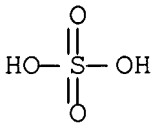
CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **7727-43-7**, Barium sulfate **17194-00-2**, Barium hydroxide
(alk. zinc-manganese dioxide **battery** with electrode active material including barium compd. as additive)

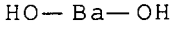
RN 7727-43-7 HCA

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



RN 17194-00-2 HCA

CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IC ICM H01M006-06

ICS H01M004-50; H01M004-42
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST zinc manganese dioxide **battery** barium compd electrode additive
IT **Battery anodes**
Battery cathodes
Primary **batteries**
(alk. **zinc**-manganese dioxide **battery** with electrode active material including barium compd. as additive)
IT **1313-13-9**, Manganese dioxide, uses 7440-66-6, Zinc, uses
(alk. zinc-manganese dioxide **battery** with electrode active material including barium compd. as additive)
IT 7440-39-3D, Barium, compd., uses **7727-43-7**, Barium sulfate **17194-00-2**, Barium hydroxide
(alk. zinc-manganese dioxide **battery** with electrode active material including barium compd. as additive)
IT 7664-93-9, Sulfuric acid, uses
(alk. zinc-manganese dioxide **battery** with electrode active material including barium compd. as additive)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 13 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 124:207242 HCA Full-text
TI Sealed Zn secondary **battery** and **Zn anode** with decreased solubility
IN Charkey, Allen
PA Energy Research Corporation, USA
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 697746	A1	19960221	EP 1995-113014	199508 18
		<--		
EP 697746	B1	20000412		
R: DE, FR, GB				
US 5460899	A	19951024	US 1994-292614	199408 18
		<--		

US 5556720 A 19960917 US 1995-431556
199505
01
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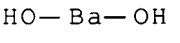
PRAI US 1994-292614 A 19940818 <--
US 1995-431556 A 19950501 <--

AB A **Zn anode** comprises a **Zn** active material (ZnO), **Ba(OH)2** or Sr(OH)2, and a conductive matrix including a metallic oxide (PbO, Bi2O3, CdO, Ga2O3, Tl2O3) which is more electropos. than Zn. The anode is used in a Zn secondary **battery** having an electrolyte (KOH) whose electrolyte constituent is a low percentage of the electrolyte. The **Zn anode** is split into electrode assemblies sepd. by a porous hydrophobic element.

IT **17194-00-2**, Bariumhydroxide
(**anode**; sealed **Zn** secondary **battery** with decreased anode soly.)
RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IT **1313-13-9**, Manganese oxide, uses
(cathode; sealed Zn secondary **battery** with decreased anode soly.)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

IC ICM H01M004-24
ICS H01M010-34
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **zinc anode** secondary **battery**
IT **Batteries**, secondary
(Ni-Zn, sealed; sealed Zn secondary **battery** with decreased anode soly.)
IT 1306-19-0, Cadmium oxide, uses
(**anode**; sealed **Zn** secondary **battery** with decreased anode soly.)
IT 1304-76-3, Bismuth oxide, uses 1305-62-0, Calciumhydroxide, uses 1314-13-2, **Zinc** oxide, uses 1314-32-5, Thallium oxide 1317-36-8, Lead oxide, uses 7440-66-6, **Zinc**, uses 12024-21-4, Gallium oxide **17194-00-2**, Bariumhydroxide

18480-07-4, Strontium hydroxide
(**anode**; sealed **Zn** secondary **battery** with decreased anode soly.)
IT 1308-06-1, Cobalt oxide (co3o4) **1313-13-9**, Manganese oxide, uses 7782-42-5, Graphite, uses 12054-48-7, Nickel hydroxide
(cathode; sealed Zn secondary **battery** with decreased anode soly.)
IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses
(current collector; sealed Zn secondary **battery** with decreased anode soly.)
IT 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide
(electrolyte; sealed Zn secondary **battery** with decreased anode soly.)
IT 9002-84-0, Ptfe
(sealed Zn secondary **battery** with decreased anode soly.)

L33 ANSWER 14 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 123:61353 HCA Full-text
TI High-capacity rechargeable bobbin **battery** with manganese dioxide cathodes
IN Tomantschger, Klaus; Book, R. James; Daniel-Ivad, Josef
PA Battery Technologies Inc., Can.
SO U.S., 9 pp. Cont.-in-part of U.S. Ser. No. 115,356, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5424145	A	19950613	US 1994-207629	199403 09
		<--		
WO 9524742	A1	19950914	WO 1995-CA128	199503 08
		<--		

W: AM, AU, BB, BG, BR, BY, CA, CZ, EE, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TT, UA, UG, UZ, VN
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9517525 A 19950925 AU 1995-17525
199503
08
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CN 1112737 A 19951129 CN 1995-103067
199503
09
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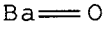
LT 4233 B 19971027 LT 1996-143
199610
08
<--
PRAI US 1992-853265 B1 19920318 <--
US 1993-115356 B2 19930902 <--
US 1994-207629 A 19940309 <--
WO 1995-CA128 W 19950308 <--

AB The rechargeable **MnO2**/Zn **battery** with high capacity, high volumetric and gravimetric energy d., and high cycle life, is capable of continued charge-discharge cycles following an overdischarge. The cell has an aq. electrolyte, with the usual solute of KOH, but the solute may also be a mixt. of ZnCl2 and NH4Cl. The electrode balance as detd. by the ratio of the theor. discharge capacity of the Zn and the theor. one electron discharge capacity of the **MnO2** ranges from >65 to 110%.

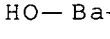
IT **1304-28-5**, Barium oxide, uses **7440-66-6**, **Zinc**, uses **17194-00-2**, Barium hydroxide
(**anode**; high-capacity rechargeable **battery** with manganese dioxide cathodes)

RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)



RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IT **7440-66-6D**, Zinc, oxides or perovskites or spinels
(cathode; high-capacity rechargeable **battery** with manganese dioxide cathodes)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

IT **1313-13-9**, Manganese dioxide, uses **7440-39-3D**, Barium, compds.
(cathode; high-capacity rechargeable **battery** with manganese dioxide cathodes)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

Ba

IC ICM H01M010-24
INCL 429057000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **battery** manganese dioxide zinc; bobbin secondary **battery** **MnO2** Zn; button secondary **battery** **MnO2** Zn; coin secondary **battery** **MnO2** Zn
IT **Batteries**, secondary
(**MnO2**/Zn, bobbin or button or coin; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT **1304-28-5**, Barium oxide, uses 1305-62-0, Calcium hydroxide, uses 1305-78-8, Calcium oxide, uses 1309-42-8, Magnesium hydroxide 1314-13-2, **Zinc** oxide, uses 7439-92-1, Lead, uses 7439-97-6, Mercury, uses 7440-55-3, Gallium, uses **7440-66-6**, **Zinc**, uses 7440-74-6,

Indium, uses **17194-00-2**, Barium hydroxide
(**anode**; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT 9002-89-5 9004-34-6, Cellulose, uses
(barrier layer; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT 7429-90-5D, Aluminum, oxides or perovskites or spinels 7439-89-6D, Iron, oxides or perovskites or spinels 7439-96-5D, Manganese, oxides or perovskites or spinels 7440-02-0D, Nickel, oxides or perovskites or spinels 7440-22-4, Silver, uses 7440-22-4D, Silver, compds. 7440-22-4D, Silver, oxides or perovskites or spinels 7440-32-6D, **Titanium, oxides** or perovskites or spinels 7440-47-3D, Chromium, oxides or perovskites or spinels 7440-48-4D, Cobalt, oxides or perovskites or spinels 7440-62-2D, Vanadium, oxides or perovskites or spinels **7440-66-6D**, Zinc, oxides or perovskites or spinels 20667-12-3, Silver oxide
(cathode; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT **1313-13-9**, Manganese dioxide, uses **7440-39-3D**, Barium, compds.
(cathode; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT 1310-58-3, Potassium hydroxide, uses 7646-85-7, Zinc chloride, uses 12125-02-9, Ammonium chloride, uses
(electrolyte; high-capacity rechargeable **battery** with manganese dioxide cathodes)
IT 79-10-7D, Acrylic acid, polymers 9002-84-0, Ptfe 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9004-32-4, Carboxymethyl cellulose 9005-25-8, Starch, uses 25087-26-7D, derivs.
(high-capacity rechargeable **battery** with manganese dioxide cathodes)

L33 ANSWER 15 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 122:138079 HCA Full-text
TI Development of a nickel/metal hydride **battery** (Ni/MH) system for EV application
AU Ikoma, Munehisa; Hamada, Shinji; Morishita, Nobuyasu; Hoshina, Yasuko; Matsuda, Hiromu; Ohta, Kazuhiro; Kimura, Tadao
CS EV Battery Development Cent., Matsushita Battery Ind. Co., Ltd., Osaka, 570, Japan
SO Proceedings - Electrochemical Society (**1994**), 94-27(Hydrogen and Metal Hydride Batteries), 370-80
CODEN: PESODO; ISSN: 0161-6374
PB Electrochemical Society
DT Journal

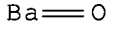
LA English

AB In order to satisfy basic **battery** characteristics for elec. vehicles (EV) such as specific energy, specific power and cycle life that are required for driving on urban streets, we have selected valve-regulated lead acid **battery** as a conventional **battery** and nickel/metal-hydride **battery** as an advanced **battery**, and have been studying on these development in order to put into practical use by 1998. Regarding to nickel/metal-hydride **battery**, excellent nickel pos. electrode with high temp. charge efficiency accomplished with additive, such as Ca compd., and exceedingly good hydrogen absorbing alloy neg. electrode with high capacity and long cycle life, achieved by adjustment of alloy compn., surface treatment, and control of binder and conductive additive have been developed to overcome difficulties in scale up of **battery** size. Module **battery** using these technologies possessed specific energy twice (70 Wh/kg) as lead acid **battery**, and has superior specific power (160 Wh/kg) and long cycle life.

IT **1304-28-5**, Barium oxide, uses **1313-13-9**, Manganese dioxide, uses **13463-67-7**, **Titania**, uses
(cathode additive; development of a nickel/metal hydride **battery** system for elec. vehicle application)

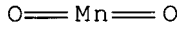
RN 1304-28-5 HCA

CN Barium oxide (BaO) (CA INDEX NAME)



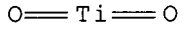
RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA

CN Titanium oxide (TiO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST nickel metal hydride **battery** elec vehicle

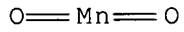
IT **Batteries**, secondary
(development of a nickel/metal hydride **battery** system for elec. vehicle application)

IT 1333-74-0, Hydrogen, processes
(absorption of; development of a nickel/metal hydride

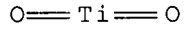
battery system for elec. vehicle application)
IT **1304-28-5**, Barium oxide, uses 1305-62-0, Calcium hydroxide, uses 1306-19-0, Cadmium oxide, uses 1308-38-9, Chromic oxide, uses 1309-37-1, Ferric oxide, uses 1309-42-8, Magnesium hydroxide 1309-64-4, Antimony trioxide, uses 1312-43-2, Indium oxide in2o3 1312-81-8, Lanthanum oxide la2o3 **1313-13-9**, Manganese dioxide, uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses 1314-62-1, Vanadium pentoxide, uses 1317-39-1, Cuprous oxide, uses 7789-75-5, Calcium fluoride, uses **13463-67-7**, **Titania**, uses 18282-10-5, Tin dioxide 18480-07-4, Strontium hydroxide 20548-54-3, Calcium sulfide 20667-12-3, Silver oxide ag2o
(cathode additive; development of a nickel/metal hydride **battery** system for elec. vehicle application)
IT 11113-74-9, Nickel hydroxide
(cathodes; development of a nickel/metal hydride **battery** system for elec. vehicle application)
IT 106934-76-3
(hydrogen-absorbing anodes; development of a nickel/metal hydride **battery** system for elec. vehicle application)

L33 ANSWER 16 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 122:138075 HCA Full-text
TI Nickel hydroxide electrode: improvement of charge efficiency at high temperature
AU Ohta, K.; Kayashi, K.; Matsuda, H.; Toyoguchi, Y.; Ikoma, M.
CS Home Appliance Technol. Res. Lab., Matsushita Electr. Ind. Co., Ltd., Osaka, 570, Japan
SO Proceedings - Electrochemical Society (**1994**), 94-27(Hydrogen and Metal Hydride Batteries), 296-302
CODEN: PESODO; ISSN: 0161-6374
PB Electrochemical Society
DT Journal
LA English
AB We examd. charge efficiency and oxygen evolution overvoltage at high temp. of pasted type nickel hydroxide electrodes including various compds. of wide range group elements. Nickel hydroxide pos. electrodes including some of these additives were found to have high oxygen evolution overvoltage and some of them to have high charge efficiency at high temp. The 130 Ah scale sealed type Ni/MH cell including nickel hydroxide electrodes with these additives was confirmed to have high charge efficiency at high temp. from the effective suppression of oxygen evolution.
IT **1304-28-5**, Barium oxide, uses **1313-13-9**, Manganese dioxide, uses **13463-67-7**, **Titania**, uses
(improvement of charge efficiency at high temp. of nickel hydroxide electrode)
RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** nickel hydroxide electrode charge efficiency
IT Electrodes
(**battery**, improvement of charge efficiency at high temp. of nickel hydroxide electrode)
IT **1304-28-5**, Barium oxide, uses 1305-62-0, Calcium hydroxide, uses 1306-19-0, Cadmium oxide, uses 1308-38-9, Chromic oxide, uses 1309-37-1, Ferric oxide, uses 1309-42-8, Magnesium hydroxide 1309-64-4, Antimony trioxide, uses 1312-43-2, Indium oxide 1312-81-8, Lanthanum oxide **1313-13-9**, Manganese dioxide, uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses 1314-62-1, Vanadium pentoxide, uses 1317-39-1, Cuprous oxide, uses 7789-75-5, Calcium fluoride, uses 12054-48-7, Nickel hydroxide **13463-67-7**, **Titania**, uses 18282-10-5, Tin dioxide 18480-07-4, Strontium hydroxide 20548-54-3, Calcium sulfide 20667-12-3, Silver oxide
(improvement of charge efficiency at high temp. of nickel hydroxide electrode)

L33 ANSWER 17 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 118:63284 HCA Full-text
TI Secondary manganese dioxide/zinc alkaline **battery** having high capacity and energy density
IN Tomantschger, Klaus; Book, R. James; Findlay, Robert D.
PA Battery Technologies Inc., Can.

SO Can. Pat. Appl., 23 pp.
CODEN: CPXXEB
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2037744	A1	19920908	CA 1991-2037744	199103 07

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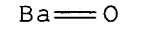
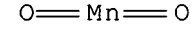
PRAI CA 1991-2037744 19910307 <--

AB The **battery** is anode limited, and each of the anode and cathode is phys. dimensioned so that the anode capacity is .apprx.(0.45-1.00) C, where C is capacity of the cathode. The energy densities of the **battery** are >70 W-h/kg and >200 W-h/L. Each electrode may contain addnl. additives. The cathode may have addnl. hydrophobic materials and a porous additive such as carbon black to improve H transport. The anode may have a small amt. of additive (Hg, Ga, In, Cd) to prevent evolution of H.

IT **1304-28-5**, Barium oxide, uses
(**anodes** contg., **zinc**, for decreasing zincate mobility, in secondary **batteries**)
RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)



IT **1313-13-9**, Manganese dioxide, uses
(cathodes, contg. hydrogen-recombination catalyst and hydrophobic additive, for secondary zinc **batteries**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



IC ICM H01M010-34
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST manganese dioxide zinc secondary **battery**; cathode manganese dioxide additive; **anode zinc** additive hydrogen evolution
IT Carbon fibers, uses
(cathodes contg., manganese dioxide, for secondary zinc

batteries)
IT **Batteries**, secondary
(manganese dioxide/zinc, alk. high energy-d.)
IT **1304-28-5**, Barium oxide, uses 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide, uses
(**anodes** contg., **zinc**, for decreasing zincate mobility, in secondary **batteries**)
IT 7439-97-6, Mercury, uses 7440-43-9, Cadmium, uses 7440-55-3, Gallium, uses 7440-74-6, Indium, uses
(**anodes** from **zinc** microalloyed with, for hydrogen evolution prevention, in secondary **batteries**)
IT 7440-66-6, **Zinc**, uses
(**anodes**, microalloyed, for hydrogen evolution prevention, in secondary **batteries**)
IT 7440-44-0
(carbon fibers, cathodes contg., manganese dioxide, for secondary zinc **batteries**)
IT 9002-84-0, PTFE 9002-88-4, Polyethylene 9003-07-0, Polypropylene
(cathodes contg., manganese dioxide, for secondary zinc **batteries**)
IT **1313-13-9**, Manganese dioxide, uses
(cathodes, contg. hydrogen-recombination catalyst and hydrophobic additive, for secondary zinc **batteries**)

L33 ANSWER 18 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 118:25005 HCA Full-text
TI Solid-state methane-air fuel cell and its manufacture
IN Mogensen, Mogens; Kindl, Bruno
PA Forskningscenter Risoe, Den.
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9215122	A1	19920903	WO 1992-DK46	199202 12
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RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
DK 9100249	A	19920814	DK 1991-249	

199102
13
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DK 167163 B1 19930906
AU 9213214 A 19920915 AU 1992-13214
199202
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EP 571494 A1 19931201 EP 1992-905538
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EP 571494 B1 19941214
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE
JP 06505591 T 19940623 JP 1992-504880
199202
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JP 3519733 B2 20040419
US 5350641 A 19940927 US 1993-107665
199308
12
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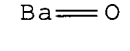
PRAI DK 1991-249 A 19910213 <--
WO 1992-DK46 A 19920212 <--

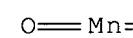
AB The fuel cell includes a Y2O3-stabilized ZrO2 electrolyte and an anode of a thin layer of CeO2-based ceramics. A metal oxide (NiO, **MnO2**, etc.), surface active on the electrolyte, is applied on the electrolyte followed by the application of the anode. This oxide can also be added to the CeO2-based ceramics of the anode. The CeO2-based ceramics include also alkali metal oxide and oxides such as Nb2O5, **TiO2**, etc., to increase vol. stability and electron cond.

IT **1304-28-5**, Barium oxide, uses **1313-13-9**, Manganese dioxide, uses **13463-67-7**, **Titania**, uses
(**anodes** from ceria-based ceramics contg., for methane-air fuel cells)

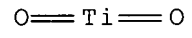
RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)



RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M008-12
ICS H01M004-86
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 57
ST methane air fuel cell; ceria ceramics anode fuel cell; yttria zirconia fuel **cell electrolyte**
IT **1304-28-5**, Barium oxide, uses 1304-76-3, Bismuth oxide (Bi2O3), uses 1305-78-8, Calcia, uses 1309-48-4, Magnesia, uses 1312-43-2, Indium oxide (In2O3) 1312-81-8, Lanthanum oxide (La2O3) **1313-13-9**, Manganese dioxide, uses 1313-96-8, Niobium pentoxide 1313-99-1, Nickel oxide (NiO), uses 1314-11-0, Strontium oxide, uses 1314-13-2, **Zinc** oxide, uses 1314-60-9, Antimony pentoxide 1314-61-0, Tantalum pentoxide 1332-37-2, Iron oxide, uses 1344-54-3, **Titanium oxide** (Ti2O3) 1344-70-3, Copper oxide 11099-11-9, Vanadium oxide 11104-61-3, Cobalt oxide 11118-57-3, Chromium oxide 12024-21-4, Gallium oxide (Ga2O3) 12060-08-1, Scandium oxide (Sc2O3) **13463-67-7**, **Titania**, uses
(**anodes** from ceria-based ceramics contg., for methane-air fuel cells)

L33 ANSWER 19 OF 19 HCA COPYRIGHT 2007 ACS on STN
AN 95:15152 HCA Full-text
TI Secondary **battery**
PA Suwa Seikosha Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 56011859	A	19810205	JP 1979-87838	197907 11

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PRAI JP 1979-87838 A 19790711 <--

AB The electrode-active material for a secondary **battery** consists of an electrochromic material selected from WO3, MoO3, **TiO2**, SiTiO3, and a Pt metal oxide or ≥2 oxides or hydroxides selected from Fe2O3, ZnO, TeO2, Sb2O3, SeO2, **BaO** , Bi2O3, CaF2, SnO2, In2O3, V2O5, Cr2O3, CdS, As2O3, GeO2, SiO2, Mn2O3, **MnO2**, CdO, Ag2O, Ir(OH)n, and rare earth oxides. The electrochromic material may also be a org. dye such as brominated viologen and spiropyran. Rapid charging of the **battery** becomes possible.

IC H01M004-48

CC 72-2 (Electrochemistry)
Section cross-reference(s): 74

ST secondary **battery** electrochromic material electrode; org dye oxide **battery** electrode

IT Electrochromic materials
Oxides, uses and miscellaneous
(electrodes for secondary **batteries** contg.)

IT Dyes
(secondary **battery** electrodes contg.)

IT Electrodes
(**battery**, dyes and electrochromic materials and oxides for secondary)

IT 7726-95-6D, compds. with dyes
(electrodes contg., for secondary **batteries**)

=> D L34 1-15 BIB ABS HITSTR HITIND

L34 ANSWER 1 OF 15 HCA COPYRIGHT 2007 ACS on STN

AN 145:30921 HCA Full-text

TI Cathodes for zinc manganese dioxide **batteries** having barium additives

IN Taucher, Waltraud; Kordesch, Karl; Daniel-Ivad, Josef

PA Austria

SO Can. Pat. Appl., 22 pp.
CODEN: CPXXEB

DT Patent

LA English

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CA 2126069	A1	19930624	CA 1992-2126069	199212 21
		<--		
CA 2126069	C	20060606		

WO 9312551 A1 19930624 WO 1992-CA553
199212
21
<--

W: AU, BB, BG, BR, CA, CS, FI, JP, KP, KR, LK, MG, MN, MW, NO, PL, RO, RU, SD

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG

PRAI HU 1991-4047 A 19911219 <--

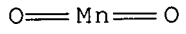
WO 1992-CA553 W 19921221 <--

AB A cathode structure for alk. manganese dioxide-zinc **primary** or rechargeable **cells** with improved capacity that comprise manganese dioxide active material, a conductive powder and an additive material uniformly mixed and pressed to form a porous body, wherein the additive is a barium compd. which is at least 3% mass of the solid components. The preferred additive is barium oxide, barium hydroxide or barium sulfate. The invention relates also to alk. manganese dioxide-zinc **primary** or rechargeable **cells**, wherein the cathode structure is employed.

IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(cathodes for zinc manganese dioxide **batteries** having barium additives)

RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



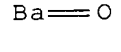
RN 7440-66-6 HCA

CN Zinc (CA INDEX NAME)

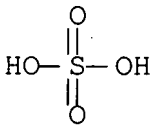
IT **1304-28-5**, Barium oxide, uses **7727-43-7**, Barium sulfate **17194-00-2**, Barium hydroxide
(cathodes for zinc manganese dioxide **batteries** having barium additives)

RN 1304-28-5 HCA

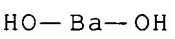
CN Barium oxide (BaO) (CA INDEX NAME)



RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST cathode zinc manganese dioxide **battery** barium additive
IT **Battery** cathodes
Primary **batteries**
Secondary **batteries**
(cathodes for zinc manganese dioxide **batteries** having barium additives)
IT 1310-58-3, Potassium hydroxide, uses **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(cathodes for zinc manganese dioxide **batteries** having barium additives)
IT **1304-28-5**, Barium oxide, uses 7440-39-3D, Barium, compd. **7727-43-7**, Barium sulfate **17194-00-2**, Barium hydroxide
(cathodes for zinc manganese dioxide **batteries** having barium additives)

L34 ANSWER 2 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 143:156366 HCA Full-text
TI Cathode material for **battery**
IN Iltchev, Nikolay K.; Mao, Ou; Eylem, Cahit; Cintra, George; Pinnell, Leslie J.
PA USA
SO U.S. Pat. Appl. Publ., 10 pp.

CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005164089	A1	20050728	US 2004-765569	200401 28
WO 2005074059	A1	20050811	WO 2005-US2512	200501 26 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1709703	A1	20061011	EP 2005-712111	200501 26 <--

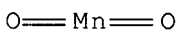
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

CN 1914752	A	20070214	CN 2005-80003474	200501 26 <--
BR 2005007167	A	20070626	BR 2005-7167	200501 26 <--
JP 2007519212	T	20070712	JP 2006-551447	200501 26 <--
PRAI US 2004-765569	A1	20040128 <--		
WO 2005-US2512	W	20050126		

AB The cathode of an alk. **battery** can include an elec. conductive additive to increase the cathode efficiency. The additive can include a barium salt and an elec. conductive material. The elec. conductive material can be coated on a surface of the barium salt. The elec. conductive material can be an elec. conductive metal oxide.

IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(cathode material for **battery**)

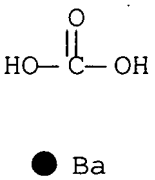
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



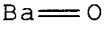
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

IT **513-77-9**, Barium carbonate **1304-28-5**, Barium oxide, uses **7727-43-7**, Barium sulfate **17194-00-2**, Barium hydroxide
(cathode material for **battery**)

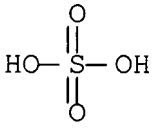
RN 513-77-9 HCA
CN Carbonic acid, barium salt (1:1) (CA INDEX NAME)



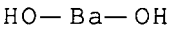
RN 1304-28-5 HCA
CN Barium oxide (BaO) (CA INDEX NAME)



RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IC ICM H01M004-62
ICS H01M004-50; H01M004-42
INCL 429232000; 429224000; 429229000; 029623100
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST cathode material **battery**
IT **Battery** cathodes
Primary **batteries**
(cathode material for **battery**)
IT Oxides (inorganic), uses
(cathode material for **battery**)
IT Coating materials
(elec. conductive; cathode material for **battery**)
IT 1310-58-3, Potassium hydroxide, uses **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses
(cathode material for **battery**)
IT **513-77-9**, Barium carbonate **1304-28-5**, Barium oxide, uses 1332-29-2, Tin oxide 7440-39-3D, Barium, salt **7727-43-7**, Barium sulfate 7782-42-5, Graphite, uses **17194-00-2**, Barium hydroxide
(cathode material for **battery**)

L34 ANSWER 3 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 141:216671 HCA Full-text
TI Preparation of metal chalcogenides from reactions of metal compounds and chalcogen

IN Seo, Dong-kyun; Iancu, Nora; Wu, Liming
PA Arizona Board of Regents, Acting for and On Behalf of Arizona State University, USA
SO PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

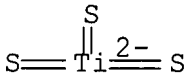
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004073021	A2	20040826	WO 2004-US2929	200402 02 <--
WO 2004073021	A3	20050113		
US 2006239882	A1	20061026	US 2006-544266	200601 10 <--

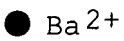
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-444078P P 20030131 <--
US 2003-511482P P 20031015 <--
WO 2004-US2929 W 20040202 <--

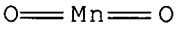
AB A method of prepg. metal chalcogenides from elemental metal or metal compds. has the following steps: providing at least one elemental metal or metal compd.; providing at least one element from periodic table groups 13-15; providing at least one chalcogen; and combining and heating the chalcogen, the group 13-15 element and the metal at sufficient time and temp. to form a metal chalcogenide. A method of functionalizing the surface of semiconducting nanoparticles has the following steps: providing at least one metal compd.; providing one chalcogenide having a cation selected from the group 13-15 (B, Al, Ga, In, Si, Ge, Sn, Pb, P, As, Sb and Bi); dissolving the chalcogenide in a 1st soln.; dissolving the metal compd. in a 2nd soln.; providing and dissolving a functional capping agent in at least one of the solns. of the metal compds. and chalcogenide; combining all solns.; and maintaining the combined soln. at a proper temp. for an appropriate time.

IT **12009-33-5P**, Barium titanium sulfide (BaTiS3)
(prepn. of)
RN 12009-33-5 HCA
CN Titanate(2-), trithioxo-, barium (1:1) (9CI) (CA INDEX NAME)

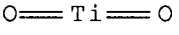




IT **1313-13-9**, Manganese dioxide, reactions **13463-67-7**
, **Titania**, reactions
(sulfidation of)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



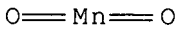
IC ICM H01L
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 78
IT **Battery** anodes
(fabrication of chalcogenides for)
IT 1306-23-6P, Cadmium sulfide, preparation 1306-24-7P, Cadmium selenide, preparation 1314-87-0P, Lead monosulfide 1314-91-6P, Lead monotelluride 1315-09-9P, Zinc selenide 1317-33-5P, Molybdenum disulfide, preparation **12009-33-5P**, Barium titanium sulfide (BaTiS3) 12030-24-9P, Indium sesquisulfide 12035-51-7P, Nickel disulfide 12039-13-3P, Titanium disulfide 12039-19-9P, Yttrium sesquisulfide 12068-85-8P, Iron disulfide 12069-00-0P, Lead monoselenide 12133-58-3P, Cerium disulfide 12138-09-9P, Tungsten disulfide 12166-20-0P, Ruthenium disulfide 12166-34-6P, Vanadium tetrasulfide 12196-48-4P, Indium potassium sulfide (InKS2) 12196-51-9P, Indium sodium sulfide (InNaS2) 12316-04-0P, Niobium trisulfide 12423-80-2P, Titanium trisulfide

12503-33-2P, Neodymium sulfide (NdS2) 12506-14-8P, Bismuth sodium sulfide (BiNaS2) 12507-23-2P, Erbium disulfide 18820-29-6P, Manganese monosulfide 20820-34-2P, Molybdenum monosulfide 27112-61-4P, Terbium sulfide TbS2 55957-42-1P, Europium sulfide EuS2 56091-75-9P, Samarium disulfide 206866-06-0P, Indium sodium selenide (InNaSe2)
(prepn. of)

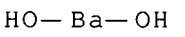
IT 1308-96-9, Europium sesquioxide 1309-37-1, Ferric oxide, reactions **1313-13-9**, Manganese dioxide, reactions 1313-27-5, Molybdenum oxide (MoO3), reactions 1313-96-8, Niobium pentoxide 1313-97-9, Neodymium sesquioxide 1313-99-1, Nickel monoxide, reactions 1314-35-8, Tungsten trioxide, reactions 1314-36-9, Yttrium sesquioxide, reactions 1314-62-1, Vanadium pentoxide, reactions 1317-61-9, Iron oxide (Fe3O4), reactions 1345-13-7, Cerium sesquioxide 7439-98-7, Molybdenum, reactions 7440-25-7, Tantalum, reactions 7440-33-7, Tungsten, reactions 12034-57-0, Niobium oxide (NbO) 12036-10-1, Ruthenium dioxide 12037-01-3, Terbium oxide (Tb4O7) 12060-58-1, Samarium sesquioxide 12061-16-4, Erbium sesquioxide **13463-67-7**, **Titania**, reactions 18868-43-4, Molybdenum oxide (MoO2)
(sulfidation of)

L34 ANSWER 4 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 139:278899 HCA Full-text
TI Study on Zn/air **battery** and its electrode materials
AU Yang, Hong-ping; Wang, Xian-you; Wang, Xing-yan; Huang, Wei-guo; Luo, Xu-fang
CS Chemistry College, Xiangtan University, Xiangtan, Hunan, 411105, Peop. Rep. China
SO Dianchi (**2003**), 33(2), 80-82
CODEN: DNCHEP; ISSN: 1001-1579
PB Dianchi Zazhishe
DT Journal
LA Chinese
AB Because of its steady performance, more sources of raw material, higher sp. energy d. and low cost, Zn/air **batteries** are studied. CoO, Ag2O, CaO, **MnO2**, **Ba(OH) 2**, Ni(OH)2 and KMnO4 were selected as catalytic cathode materials for Zn/air **batteries.** To compare the characteristics of the various catalysts, the electrochem. performance of the materials was measured by linear sweep voltammetry. A mixed catalyst had smaller polarization characteristics and better electrode performance than others and this kind of material was suitable for cathodes of Zn/air **batteries.** A test of performance showed that the **battery** with the mixed catalyst had a more steady discharging potential stage and greater discharging capacity.
IT **1313-13-9**, Manganese oxide (**MnO2**), uses
17194-00-2, Barium hydroxide (**Ba(OH) 2**)
(catalytic cathode materials for Zn/air **batteries**)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IT **7440-66-6**, Zinc, uses
(catalytic cathode materials for Zn/air **batteries**)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST air zinc **battery** manganese oxide catalytic cathode material
IT Air
Battery cathodes
Primary **batteries**
(catalytic cathode materials for Zn/air **batteries**)
IT 1305-78-8, Calcium oxide (CaO), uses 1307-96-6, Cobaltous oxide, uses **1313-13-9**, Manganese oxide (**MnO2**), uses 7722-64-7, Potassium permanganate 12054-48-7, Nickel hydroxide (Ni(OH)2) **17194-00-2**, Barium hydroxide (**Ba(OH)2**) 20667-12-3, Silver oxide (Ag2O)
(catalytic cathode materials for Zn/air **batteries**)
IT **7440-66-6**, Zinc, uses
(catalytic cathode materials for Zn/air **batteries**)

L34 ANSWER 5 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 139:218132 HCA Full-text
TI Process for sealing of stone porous material
IN Ordonez Delgado, Salvador; Aldaz Riera, Antonio; Montiel Leguey, Vicente; Exposito Rodriguez, Eduardo; Bernabeu Gonzalvez, Ana

PA Universidad de Alicante, Spain
SO Span., 8 pp.
CODEN: SPXXAD
DT Patent
LA Spanish
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ES 2183696	A1	20030316	ES 2000-2681	200011 07
ES 2183696	B2	20031116		

PRAI ES 2000-2681 20001107 <--

AB Process for sealing of stone porous material consists of pptn. of insol. compd. on surface of pores of the stone porous material by the reaction of cations and anions moving in elec. field in electrochem. reactor. The sealed porous material can be used in constraction and decoration.

IT **1313-13-9**, Manganese dioxide, uses
(anode in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

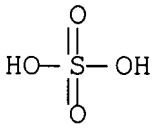
O=Mn=O

IT **7440-66-6**, Zinc, uses
(electrode in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

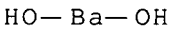
Zn

IT **7727-43-7P**, Barium sulfate **17194-00-2P**, Barium hydroxide
(sealing of stone porous material by electrophoretic deposition of)
RN 7727-43-7 HCA

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IC ICM C04B041-45
ICS B28D001-00
CC 58-6 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 66
IT Current density
(a in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
IT Anodes
(dimensionally stable anodes; use in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
IT Electrodes
(gas-diffusion; use in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
IT 1309-60-0, Lead dioxide **1313-13-9**, Manganese dioxide, uses 7440-02-0, Nickel, uses 18282-10-5, Tin dioxide
(anode in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
IT 7782-40-3, Diamond, uses
(boron doped; anode in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)
IT 7439-92-1, Lead, uses 7440-06-4, Platinum, uses 7440-32-6,

Titanium, uses 7440-50-8, Copper, uses **7440-66-6**, Zinc, uses 7782-42-5, Graphite, uses 12597-68-1, Stainless steel, uses 12597-69-2, Steel, uses 37286-21-8, HASTELLOY
(electrode in **electrolytic cell** for sealing of stone porous material by formation of insol. compd. in pores by electrophoretic deposition)

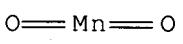
IT 471-34-1P, Calcium carbonate, preparation 1305-62-0P, Calcium hydroxide, preparation 1309-37-1P, Iron oxide Fe2O3, preparation **7727-43-7P**, Barium sulfate 7778-18-9P, Calcium sulfate 10103-46-5P, Calcium phosphate 13847-18-2P, Barium phosphate **17194-00-2P**, Barium hydroxide
(sealing of stone porous material by electrophoretic deposition of)

L34 ANSWER 6 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 138:306736 HCA Full-text
TI Ferrate electrode and alkaline high-energy **battery**
IN Pan, Junqing; Chen, Yongmei; Zhao, Xuhui
PA Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1346161	A	20020424	CN 2000-124579	200009 22 <--
PRAI CN 2000-124579			20000922 <--	

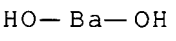
AB The electrode is composed of a ferrate electrode active material (BaFeO4, CaFeO4, SrFeO4, and/or K2FeO4) 65-85, a conductor (powd. graphite or purified colloidal graphite) 8-15, an additive (**MnO2**) 0-10, an electrolyte (7-13M NaOH or KOH) 7-15, and a binder 0-2%. When the electrode active material is BaFeO4, SrFeO4, or CaFeO4, the electrolyte is **Ba(OH)2**, Sr(OH)2, or Ca(OH)2, resp. The **battery** consists of pos. electrode, neg. electrode, alk. electrolyte, and a separator between the pos. electrode and the neg. electrode; the pos. electrode is the ferrate electrode, and the neg. electrode is an active metal such as Zn, Fe, or Al. When powd. Fe is used as neg. electrode, the powd. Fe is prepd. by reducing Fe2O3 with H at 650-675°, and contains addnl. 1-4% HgO or Cd, or is coated with a layer of Sn 1-10 μm thick.

IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses **17194-00-2**, Barium hydroxide
(ferrate electrode and alk. high-energy **battery**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

RN 17194-00-2 HCA
CN Barium hydroxide (Ba(OH)2) (CA INDEX NAME)



IC ICM H01M004-48
ICS H01M004-52; H01M004-06; H01M006-04; H01M004-38
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST ferrate pos electrode alk **battery**
IT **Battery** cathodes
Primary **batteries**
(ferrate electrode and alk. high-energy **battery**)
IT Anions
(ferrates; ferrate electrode and alk. high-energy **battery**
)
IT 1305-62-0, Calcium hydroxide, uses 1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses **1313-13-9**, Manganese dioxide, uses 7429-90-5, Aluminum, uses 7440-31-5, Tin, uses 7440-43-9, Cadmium, uses **7440-66-6**, Zinc, uses 7782-42-5, Graphite, uses 13773-22-3, Iron strontium oxide (FeSrO4) 13773-23-4, Barium iron oxide (BaFeO4) **17194-00-2**, Barium hydroxide 18480-07-4, Strontium hydroxide 35764-67-1, Calcium ferrate 251321-67-2, Iron potassium oxide (FeKO4)
(ferrate electrode and alk. high-energy **battery**)
IT 7439-89-6P, Iron, uses
(ferrate electrode and alk. high-energy **battery**)

L34 ANSWER 7 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 130:185153 HCA Full-text
TI Method for recovery of zinc and manganese dioxide from spent

dry cell

IN Bao, Zhixiang

PA Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.
CODEN: CNXXEV

DT Patent

LA Chinese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1120592	A	19960417	CN 1994-111199	199410 08
PRAI CN 1994-111199		19941008		

AB The method comprises (1) calcining the **dry cells** in a reducing atm., (2) removing C rods and Zn lumps passing a screen and removing Fe by electromagnetic method, (3) mixing with concd. H_2SO_4 under stirring and heating the paste by passing hot air to remove HCl, (4) dissolving the material with spent electrolytic soln., (5) adjusting pH of the soln. to 3.8-5.2 with $Ca(OH)_2$ or **$Ba(OH)_2$**, and (6) replacing with powd. Zn and electrolysis to deposit Zn and **MnO_2.**

IT **1313-13-9P**, Manganese dioxide, preparation
7440-66-6P, Zinc, preparation
(recovery of zinc and manganese dioxide from spent **dry cell)**

RN 1313-13-9 HCA

CN Manganese oxide (MnO_2) (CA INDEX NAME)

O═Mn═O

RN 7440-66-6 HCA

CN Zinc (CA INDEX NAME)

Zn

IC C22B-700

CC 54-3 (Extractive Metallurgy)
Section cross-reference(s): 52

ST zinc manganese dioxide recovery **dry cell**

IT Electrodeposition
(recovery of zinc and manganese dioxide from spent **dry**

cell by electrodeposition)
IT **1313-13-9P**, Manganese dioxide, preparation
7440-66-6P, Zinc, preparation
(recovery of zinc and manganese dioxide from spent **dry cell**)

L34 ANSWER 8 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 128:50715 HCA Full-text
TI Preparation of physically modified manganese dioxide for cathodes of secondary alkaline **batteries** of long cycle life
IN Klos, Matthias; Rahner, Dietmar; Plieth, Waldfried
PA Technische Universitaet Dresden, Germany
SO Ger. Offen., 7 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19617512	A1	19971113	DE 1996-19617512	199605 02

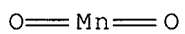
<--
PRAI DE 1996-19617512 19960502 <--
AB **MnO2** is mixed with MTiO3 at 100:(2-35) wt. ratio, and the obtained mixt. is used to prep. cathodes for the title **batteries.** M is an alk. earth metal and esp. Ba. **MnO2** can contain crystal H2O.
IT **12047-27-7**, Barium titanate, uses
(cathodes of long cycle-life alk. **batteries** from mixts. of manganese dioxide and)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **1313-13-9**, Manganese oxide (**MnO2**), uses
(cathodes of long cycle-life alk. **batteries** from phys. modified)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

IC ICM H01M004-50
ICA C01G045-02; C01G023-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 49
ST manganese dioxide barium titanate **battery** cathode; cathode **battery** modified manganese dioxide; alk earth metal titanate **battery** modified
IT **Battery** cathodes
(prepn. of phys. modified manganese dioxide for long cycle-life secondary alk.)
IT Alkaline earth compounds
(titanates; cathodes of long cycle-life alk. **batteries** from mixts. of manganese dioxide and)
IT **12047-27-7**, Barium titanate, uses 89412-00-0, Radium **titanium oxide** (RaTiO3)
(cathodes of long cycle-life alk. **batteries** from mixts. of manganese dioxide and)
IT **1313-13-9**, Manganese oxide (**MnO2**), uses
(cathodes of long cycle-life alk. **batteries** from phys. modified)

L34 ANSWER 9 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 128:50676 HCA Full-text
TI The effect of alkaline earth titanates on the rechargeability of manganese dioxide in alkaline electrolyte
AU Kloss, M.; Rahner, D.; Plieth, W.
CS Dresden University of Technology, Institute of Physical Chemistry and Electrochemistry, Dresden, 01062, Germany
SO Journal of Power Sources (**1997**), 69(1-2), 137-143
CODEN: JPSODZ; ISSN: 0378-7753
PB Elsevier Science S.A.
DT Journal
LA English
AB Various alk. earth titanates were tested as the additives for manganese dioxide electrodes in aq. electrolyte (9 mol/L KOH) at room temp. The influence of the additives on the discharge capacity of **primary cells** and esp. on cycling behavior of rechargeable alk. **batteries** is discussed.
IT **1313-13-9**, Manganese dioxide, uses
(effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

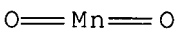


IT **12047-27-7**, Barium titanate (BaTiO3), uses
(effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)

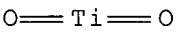
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST alk earth titanate manganese dioxide cathode; **battery** manganese dioxide cathode rechargeability
IT Titanates
Titanates
(alk. earth; effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
IT **Battery** cathodes
(effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
IT Alkaline earth oxides
Alkaline earth oxides
(**titanium oxides**; effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
IT **1313-13-9**, Manganese dioxide, uses
(effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
IT **12047-27-7**, Barium titanate (BaTiO3), uses 12049-50-2, Calcium titanate (CaTiO3) 12060-59-2, Strontium titanate (SrTiO3)
(effect of alk. earth titanates on rechargeability of manganese dioxide **battery** cathode in alk. electrolyte)
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 10 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 127:250505 HCA Full-text
TI The effect of new additives on discharge behavior and rechargeability of manganese dioxide in alkaline electrolyte
AU Kloss, M.; Gruhnwald, C.; Rahner, D.; Plieth, W.; Hilarius, V.; Glausch, R.; Pfaff, G.
CS Institute of Physical Chemistry and Electrochemistry, Dresden University of Technology, Dresden, D-01062, Germany
SO Proceedings - Electrochemical Society (**1997**), 97-18(Batteries for Portable Applications and Electric Vehicles), 905-914
CODEN: PESODO; ISSN: 0161-6374
PB Electrochemical Society
DT Journal
LA English
AB Various new additives have been tested as modifiers for manganese dioxide electrodes in aq. electrolyte (9 mol/L KOH) at room temp. The influence of the additives on the discharge capacity of **primary cells** and esp. on cycling behavior of rechargeable alk. **batteries** will be discussed.

IT **1313-13-9**, Manganese dioxide, uses
(effect of new additives on discharge behavior and rechargeability of manganese dioxide in alk. electrolyte)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **12047-27-7**, Barium titanate, uses **13463-67-7**, **Titania**, uses
(effect of new additives on discharge behavior and rechargeability of manganese dioxide in alk. electrolyte)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** manganese dioxide alk electrolyte rechargeability
IT Primary **batteries**
Secondary **batteries**
(effect of new additives on discharge behavior and rechargeability of manganese dioxide in alk. electrolyte)
IT **1313-13-9**, Manganese dioxide, uses
(effect of new additives on discharge behavior and rechargeability of manganese dioxide in alk. electrolyte)
IT 1345-25-1, Iron oxide feo, uses **12047-27-7**, Barium titanate, uses 12049-50-2, Calcium titanate 12060-59-2, Strontium titanate **13463-67-7**, **Titania**, uses 18282-10-5, Tin dioxide 142444-04-0, Iriodin 120 142661-62-9, Iriodin 111 Rutile Fine Satin 143748-91-8
(effect of new additives on discharge behavior and rechargeability of manganese dioxide in alk. electrolyte)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 11 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 126:106565 HCA Full-text

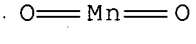
TI **Battery** cathodes containing additives
IN Swierbut, Wendi M.; Nardi, John C.
PA Eveready Battery Company, USA
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 747982	A1	19961211	EP 1996-304263	199606 07
EP 747982	B1	20000126		
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
US 5599644	A	19970204	US 1995-485424	199506 07
CA 2178423	A1	19961208	CA 1996-2178423	199606 06
JP 09106811	A	19970422	JP 1996-143930	199606 06
CN 1147703	A	19970416	CN 1996-106837	199606 07

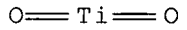
PRAI US 1995-485424 A 19950607 <--

AB The cathodes include a **MnO2** active material and an additive selected from ≥1 of SnO2, Fe2O3-**TiO2**, **TiO2**, BaTiO3, K2TiO3, Nb2O5, V2O5 or SnO. The cathode is esp. adapted for use in an alk. Zn **battery.**

IT **1313-13-9**, Manganese dioxide, uses
(**battery** cathodes contg. additives)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



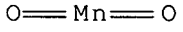
IT **12047-27-7**, Barium titanate (BaTiO3), uses
13463-67-7, **Titanium oxide** (**TiO2**
), uses
(**battery** cathodes from manganese dioxide contg.)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M004-50
ICS H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** cathode manganese dioxide additive; tin oxide
manganese dioxide **battery** cathode; **titania**
manganese dioxide **battery** cathode; barium titanate
manganese dioxide **battery** cathode; titanate potassium
manganese dioxide **battery** cathode; niobium oxide manganese
dioxide **battery** cathode; vanadium oxide manganese dioxide
battery cathode; iron oxide manganese dioxide
battery cathode
IT **Battery** cathodes
(manganese dioxide contg. additives)
IT **1313-13-9**, Manganese dioxide, uses
(**battery** cathodes contg. additives)
IT 1309-37-1, Iron oxide (Fe2O3), uses 1313-96-8, Niobium oxide
(Nb2O5) 1314-62-1, Vanadium oxide (V2O5), uses 12030-97-6,
Potassium titanate (K2TiO3) **12047-27-7**, Barium titanate
(BaTiO3), uses **13463-67-7**, **Titanium**
oxide (**TiO2**), uses 18282-10-5, Tin oxide (SnO2)
21651-19-4, Tin oxide (SnO)
(**battery** cathodes from manganese dioxide contg.)

L34 ANSWER 12 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 125:334032 HCA Full-text
TI Screening study of mixed transition-metal oxides for use as cathodes
in thermal **batteries**
AU Guidotti, Ronald A.; Reinhardt, Frederick W.
CS Sandia National Laboratories, Albuquerque, NM, 87185-0614, USA
SO Proceedings of the Power Sources Conference (**1996**), 37th,
251-254

CODEN: PPOCFD
PB National Technical Information Service
DT Journal
LA English
AB Mixed transition-metal oxides were evaluated for possible use as cathodes in thermal **batteries.** Over 100 candidates were examd., including com. materials and many that were synthesized in house. The mixed oxides were based on Ti, V, Nb, Cr, Mo, W, Mn, Fe, Co, Ni, and Cu doped with other transition metals. A no. of individual (single-metal) oxides were included in the study for comparison. The candidates were tested in single cells with Li(Si) anodes and separators based on LiCl-KCl eutectic. Screening was done under const.-current conditions at current densities of 125 mA/cm2 and, to a lesser extent, 50 mA/cm2 at a temp. of 500°C. The relative performance of the oxide cathodes is discussed, along with the relative limitations of these materials.
IT **1313-13-9**, Manganese oxide **mno2**, uses
12589-48-9, Barium nickel oxide banio2 **183858-80-2**
, Barium nickel oxide (BaNi2O5)
(mixed transition-metal oxides for use as cathodes in thermal **batteries**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 12589-48-9 HCA
CN Barium nickel oxide (BaNiO2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Ba	1	7440-39-3
Ni	1	7440-02-0

RN 183858-80-2 HCA
CN Barium nickel oxide (BaNi2O5) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	5	17778-80-2
Ba	1	7440-39-3
Ni	2	7440-02-0

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76

ST transition metal oxide cathode thermal **battery**

IT Transition metal oxides
(mixed transition-metal oxides for use as cathodes in thermal **batteries**)

IT Cathodes
(**battery**, mixed transition-metal oxides for use as cathodes in thermal **batteries**)

IT 1314-62-1, Vanadium oxide (V2O5), uses
(contg. molybdenum; mixed transition-metal oxides for use as cathodes in thermal **batteries**)

IT 1308-04-9, Cobalt oxide (Co2O3) 1308-06-1, Cobalt oxide (Co3O4) 1309-60-0, Lead oxide **1313-13-9**, Manganese oxide **mno2**, uses 1313-27-5, Molybdenum trioxide, uses 1313-96-8, Niobium oxide 1313-99-1, Nickel oxide, uses 1317-34-6, Manganese oxide mn2o3 1335-25-7, Lead oxide 7789-82-4, Calcium molybdenum oxide camoo4 7790-75-2, Calcium Tungsten oxide cawo4 10101-58-3, Cobalt Tungsten oxide cowo4 10381-36-9, Nickel phosphate 12013-87-5, Calcium chromium chloride oxide (Ca5Cr3ClO12) 12016-69-2, Chromium cobalt oxide cocr2o4 12017-01-5, Cobalt **titanium oxide** cotio3 12018-01-8, Chromium oxide 12018-18-7, Nickel Chromium oxide nicr2o4 12018-19-8, Zinc Chromium oxide zncr2o4 12018-79-0, Copper iron oxide cufe2o4 12019-08-8, Copper **titanium oxide** cutio3 12022-71-8, Iron **titanium oxide** fetio3 12023-70-0, Iron lithium oxide fe5lio8 12031-65-1, Lithium Nickel oxide linio2 12032-74-5, Manganese **titanium oxide** mntio3 12034-59-2, Niobium oxide nbo2 12035-39-1, Nickel **titanium oxide** nitio3 12036-21-4, Vanadium oxide vo2 12036-22-5, Tungsten dioxide 12057-17-9, Lithium manganese oxide limn2o4 12137-09-6, Nickel oxide ni3o4 12164-05-5, Nickel sodium oxide nanio2 12190-79-3, Cobalt lithium oxide colio2 12423-04-0, Lithium vanadium oxide liv3o8 **12589-48-9**, Barium nickel oxide banio2 13455-25-9 13568-36-0, Lithium nickel vanadium oxide linivo4 13568-40-6, Lithium molybdenum oxide li2moo4 13568-45-1, Lithium Tungsten oxide li2wo4 13587-35-4, Copper Tungsten oxide cuwo4 13597-56-3, Tungsten zinc oxide (WZnO4) 13767-32-3, Zinc molybdenum oxide znmoo4 13767-34-5, Copper molybdenum oxide cumoo4 14100-64-2, Calcium vanadium oxide cav2o6 14177-46-9, Manganese Tungsten oxide mnwo4 14177-51-6, Nickel Tungsten oxide niwo4 14958-34-0, Copper vanadium oxide cuv2o6 15060-59-0, Lithium Vanadium oxide livo3 15593-56-3, Lithium Vanadium oxide li3vo4 18282-10-5, Tin dioxide 18868-43-4, Molybdenum dioxide 20619-24-3, Nickel vanadium oxide ni3v2o8 27774-13-6 37216-69-6, Cobalt Sodium oxide conao2 40573-22-6, Nickel vanadium oxide ni2v2o7 58398-67-7, Potassium vanadium oxide (K5V5O13) 95210-51-8, Lithium Tungsten oxide liwo3

127575-11-5, Lithium manganese oxide li2mn4o9 144973-42-2, Lithium manganese Nickel oxide limn0.3ni0.7o2 149852-75-5, Chromium lithium manganese oxide cr0.4limn1.6o4 183858-77-7, Copper molybdenum vanadium oxide (CuMoVO6) 183858-78-8, Copper molybdenum vanadium oxide (CuMo0.3V1.7O6) 183858-79-9, Copper molybdenum vanadium oxide (CuMo0.6V1.4O6) **183858-80-2**, Barium nickel oxide (BaNi2O5) 183858-82-4, Chromium nickel zirconium oxide 183858-83-5, Lithium manganese vanadium oxide (LiMnVO3.5) 183858-84-6, Lithium manganese vanadium oxide (LiMn1.5V0.5O3.75) 183858-85-7, Lithium manganese vanadium oxide (LiMn1.75V0.25O3.88) (mixed transition-metal oxides for use as cathodes in thermal **batteries**)

L34 ANSWER 13 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 117:254874 HCA Full-text
TI Photochargeable secondary **batteries**
IN Akuto, Takaharu; Hasuda, Yoshiaki; Ishizawa, Maki; Horie, Toshio
PA Nippon Telegraph and Telephone Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

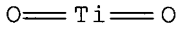
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 04171681	A	19920618	JP 1990-300268	199011 06 <--
JP 3025798	B2	20000327		

PRAI JP 1990-300268 19901106 <--

AB The **batteries** have a cathode and an anode immersed in an electrolyte and sepd. from each other, an n-type semiconductor photoelectrode, having 1 side in contact with the electrolyte, elec. connected to the anode and insulated from the cathode, and/or a p-type semiconductor photoelectrode, having 1 side in contact with the electrolyte, elec. connected to the cathode and insulated from the anode.

IT **1313-13-9**, Manganese oxide (**MnO2**), uses
12047-27-7, Barium **titanium oxide** (BaTiO3), uses **13463-67-7**, **Titanium oxide (TiO2)**, uses
(photochargeable secondary **batteries**)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (CA INDEX NAME)



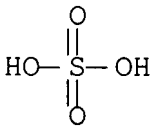
IC ICM H01M014-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST photochargeable secondary **battery**
IT Semiconductor materials
(electrodes, for photochargeable secondary **batteries**)
IT **Batteries**, secondary
(photochargeable, semiconductor photoelectrodes for)
IT Electrodes
(photoelectrochem., semiconductor, for photochargeable **batteries**)
IT 409-21-2, Silicon carbide (SiC), uses 1302-09-6, Silver selenide (Ag2Se) 1303-11-3, Indium arsenide (InAs), uses 1306-23-6, Cadmium sulfide (CdS), uses 1306-24-7, Cadmium selenide (CdSe), uses 1308-38-9, Chromium oxide (Cr2O3), uses **1313-13-9**, Manganese oxide (**MnO2**), uses 1313-27-5, Molybdenum oxide (MoO3), uses 1313-96-8, Niobium oxide (Nb2O5) 1314-13-2, Zinc oxide (ZnO), uses 1314-20-1, Thorium oxide (ThO2), uses 1314-35-8, Tungsten oxide (WO3), uses 1314-61-0, Tantalum oxide (Ta2O5) 1314-62-1, Vanadium oxide (V2O5), uses 1314-98-3, Zinc sulfide (ZnS), uses 1315-11-3, Zinc telluride (ZnTe) 1327-50-0, Antimony telluride (Sb2Te3) 1345-07-9, Bismuth sulfide (Bi2S3) 7758-97-6 12002-99-2, Silver telluride (Ag2Te) **12047-27-7**, Barium **titanium oxide** (BaTiO3), uses 12064-03-8 12068-69-8, Bismuth selenide (Bi2Se3) 12068-85-8, Iron sulfide (FeS2) **13463-67-7**, **Titanium oxide** (**TiO2**), uses 18282-10-5, Tin oxide (SnO2) 20033-08-3, Manganese oxide (MnO3) 20601-83-6, Mercury selenide (HgSe) 21548-73-2, Silver sulfide (Ag2S) 22398-80-7, Indium phosphide (InP), uses 22831-42-1, Aluminum arsenide (AlAs) 25152-52-7 139284-70-1, Lithium tungsten oxide (Li0-1WO3) 144769-06-2, Lead oxide (PbO0-2) 144769-07-3, Potassium tungsten oxide (K0-1WO3) 144769-08-4, Sodium tungsten oxide (Na0-1WO3)
(photochargeable secondary **batteries**)
IT 81-31-2, Violanthrene 81-77-6 92-24-0, Tetracene 116-71-2,

Violanthrone 120-12-7, Anthracene, uses 128-64-3, Isoviolanthrone 128-70-1, Pyranthrone 129-00-0, Pyrene, uses 135-48-8, Pentacene 147-14-8, Copper phthalocyanine 190-26-1, Ovalene 191-07-1, Coronene 191-13-9, Pyranthrene 191-26-4, Anthanthrene 198-55-0, Perylene 475-71-8, Flavanthrone 574-93-6, Phthalocyanine 641-13-4, Anthanthrone 1303-00-0, Gallium arsenide (GaAs), uses 1304-76-3, Bismuth oxide (Bi2O3), uses 1307-96-6, Cobalt oxide (CoO), uses 1313-99-1, Nickel oxide (NiO), uses 1314-95-0, Tin sulfide (SnS) 1317-37-9, Iron sulfide (FeS) 4430-29-9, Isoviolanthrene 7440-21-3, Silicon, uses 7440-56-4, Germanium, uses 7681-65-4, Copper iodide (CuI) 7782-42-5, Graphite, uses 7782-49-2, Selenium, uses 12036-32-7, Praseodymium oxide (Pr2O3) 12063-98-8, Gallium phosphide (GaP), uses 18868-43-4, Molybdenum oxide (MoO2) 20667-12-3, Silver oxide (Ag2O) 25067-58-7, Polyacetylene 25190-62-9, Poly-p-phenylene 25233-30-1, Polyaniline 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 110640-13-6, Lead titanium zirconium oxide (PbTi0.7Zr0.3O3) 144470-21-3, Cyananthrone 144470-44-0, Indanthrone black
(photoelectrode, in photochargeable secondary **batteries**
)

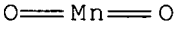
L34 ANSWER 14 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 106:74847 HCA Full-text
TI Preparation and electrochemical behavior of doped manganese dioxide
AU Bauer, Juergen; Buss, Dieter H.; Glemser, Oskar
CS Inst. Anorg. Chem., Univ. Goettingen, Goettingen, D-3400, Fed. Rep. Ger.
SO Berichte der Bunsen-Gesellschaft (**1986**), 90(12), 1220-3
CODEN: BBPCAX; ISSN: 0005-9021
DT Journal
LA English
AB Doped Mn dioxides were prepd. by homogeneous hydrolysis and oxidn. of manganese(III)-compds. Three sets of conditions were used: (a) oxidn. and hydrolysis in acid medium, (b) oxidn. and hydrolysis in basic medium, (c) oxidn. in acid and hydrolysis in basic medium. Doping elements were Mg, Ca, Sr, Ba, Al, Fe, Zn. All ppts. were essentially amorphous. The discharge capacity of products from (a) varied between 44 and 48 mAh/g except for the Al-doped product, which, as the no. of cycles increases, displays a continuous improvement of capacity up to 65 mAh/g, producing a hard discharge curve. Products from condition are remarkable with respect to both discharge capacity and cycle stability; the product doped with Ba had 91 mAh/g discharge capacity and this value remained const. for 320 cycles.
IT **7440-66-6**, Zinc, uses and miscellaneous
(doping by, of manganese dioxide, discharge capacity in relation to)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

IT 7727-43-7, Barium sulfate (**BaSO4**)
(in doping of manganese dioxide, discharge capacity in relation to)
RN 7727-43-7 HCA
CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



IT **1313-13-9P**, Manganese dioxide, preparation
(prepn. and electrochem. behavior of doped, hydrolysis and oxidn. of manganese(III) compds. in)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 52, 78
IT Cathodes
(**battery**, manganese dioxide contg. metal dopants, discharge capacity in relation to)
IT 7429-90-5, Aluminum, uses and miscellaneous 7439-89-6, Iron, uses and miscellaneous 7439-95-4, Magnesium, uses and miscellaneous 7440-02-0, Nickel, uses and miscellaneous 7440-24-6, Strontium, uses and miscellaneous 7440-39-3, Barium, uses and miscellaneous **7440-66-6**, Zinc, uses and miscellaneous 7440-70-2, Calcium, uses and miscellaneous
(doping by, of manganese dioxide, discharge capacity in relation to)
IT 7727-43-7, Barium sulfate (**BaSO4**)

(in doping of manganese dioxide, discharge capacity in relation to)

IT **1313-13-9P**, Manganese dioxide, preparation
(prepn. and electrochem. behavior of doped, hydrolysis and oxidn. of manganese(III) compds. in)

L34 ANSWER 15 OF 15 HCA COPYRIGHT 2007 ACS on STN
AN 71:9121 HCA Full-text
TI Electrolytic production of 99.99% pure zinc
IN Wozniczko, Wlodzimierz; Kubas, Jan; Jeliczko, Zbigniew; Laczek, Tadeusz; Lis, Wladyslaw; Ficek, Pawel; Grabowski, Zbigniew; Syryczynski, Zygmunt
PA Zaklady Gorniczo-Hutnicze"Boleslaw" Przedsiebiorstwo Panstwowe
SO Pol., 5 pp.
CODEN: POXXA7
DT Patent
LA Polish
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI PL 54773		19680320	PL 196605 27 <--	

AB Calcined ZnO and zinc blende are treated with H2SO4 (esp. with the electrolyte contg. .apprx.110 g. H2SO4/1., recycled from the **electrolytic cells**) at 70°, sediments in the resulting mixt. allowed to settle out, and the ZnSO4 soln. filtered off. To remove impurities of the Fe group from this soln., it is mixed with an addnl. amt. of the calcined ZnO or zinc blende and then with **MnO2** or pyrolusite to oxidize Fe2+ and other impurities. After removing the suspension (sedimentation and filtration), the ZnSO4 soln. is continuously mixed with Zn-Cd slime from filters (the final stage of purification from Cd and Cu), the mixt. filtered, and the filtrate treated with Zn dust suspended in water. The ZnSO4 soln. is again sepd. by filtration, the remaining impurities Fe2+, Ni2+, As3+, Sb3+, and Sn2+ oxidized with KMnO4, pptd. at .apprx.32°, and sepd. in crystallizers, and the purified soln. (contg. Cd, Fe, Cu, Ni, Pb, As, Sb, and Cl in the amt. ≤0.0004, 0.0003, 0.0001, 0.002, 0.0005, 0.0005, 0.0005, and 0.0050 g./l., resp., Co 0.006-0.008 g./l., Mn 1-18 g./l., and traces of Ge.) fed to the **electrolytic cells.** Electrolysis is at the ≤38°, the c.d. .apprx.400-420 amp./m.2, voltage 3.3-3.6 v., and distance between the anode and cathode ≤38 mm. To the electrolytic bath a mixt. of ground **BaCO3** and SrCO3 is added in the amt. .apprx.2 kg./ton of the cathode Zn. Anodes are made of Pb-Ag alloy (1% Ag, max. 0.01% impurities), pickled in concd. H2SO4 at 80°, then oxidized at the surface (Pb to PbO2) with KMnO4 during 48 hrs. (the 1st 24 hrs. at .apprx.400 amp./m.2 and 3.6 v.) and covered with **MnO2** slime. The passivation is repeated every month.

IT **7440-66-6P**, preparation
(electrochem.)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

IC C22D
CC 77 (Electrochemistry)
IT **7440-66-6P**, preparation
(electrochem.)

=> D L35 1-14 BIB ABS HITSTR HITIND

L35 ANSWER 1 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 144:54466 HCA Full-text
TI Primary alkaline **battery**
IN Koji, Yasuhiko; Adachi, Koji
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005353447	A	20051222	JP 2004-173657	200406 11
		<--		
PRAI JP 2004-173657		20040611 <--		

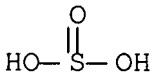
AB The **battery** has a cathode mixt. comprising a **MnO2** -contg. active mass and a gel-like **anode** comprising a **Zn**-contg. **anode**; where the cathode mixt. and/or the anode contains a a sulfite salt.
IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**,
Zinc, uses
(electrodes contg. sulfite salts for primary alk.
batteries)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O═Mn═O

RN 7440-66-6 HCA

CN Zinc (CA INDEX NAME)

IT **7787-39-5**, Barium sulfite
(electrodes contg. sulfite salts for primary alk.
batteries)
RN 7787-39-5 HCA
CN Sulfurous acid, barium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M004-62
ICS H01M004-06; H01M006-06
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST primary alk **battery** electrode additive sulfite salt
IT **Battery** electrodes
Primary **batteries**
(electrodes contg. sulfite salts for primary alk.
batteries)
IT 1310-73-2, Sodium hydroxide, uses **1313-13-9**, Manganese
dioxide, uses **7440-66-6**, Zinc, uses
(electrodes contg. sulfite salts for primary alk.
batteries)
IT 7757-83-7, Sodium sulfite **7787-39-5**, Barium sulfite
10117-38-1, Potassium sulfite 13453-87-7
(electrodes contg. sulfite salts for primary alk.
batteries)
IT 9003-04-7, Sodium polyacrylate
(electrodes contg. sulfite salts for primary alk.
batteries)

L35 ANSWER 2 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 140:377851 HCA Full-text
TI Study on alkaline Zn-super-iron(VI) **battery**
AU Sun, Yan-zhi; Pan, Jun-qing; Wan, Ping-yu; Liu, Xiao-guang
CS Faculty of Science, Beijing University of Chemical Technology,

Beijing, 100029, Peop. Rep. China
SO Dianyuan Jishu (**2003**), 27(6), 518-521
CODEN: DIJIFT; ISSN: 1002-087X
PB Dianyuan Jishu Bianjibu
DT Journal
LA Chinese
AB A new type of alk. **battery** with a super-Fe (K2FeO4 or BaFeO4) cathode and **Zn anode** was developed. The electrochem. properties of Zn-super-Fe(VI) **batteries** were studied by testing their discharge capacity at different loads and temps. The discharge capacity of Zn-BaFeO4 and Zn-K2FeO4 in AA and AAA cell configuration increased 56 .apprx. 116% compared to that of conventional alk. Zn-**MnO2 battery** during low, medium, and high const. load discharging. Discharge time of Zn-super-Fe(VI) in AA cell configuration is 95% longer than that of std. Zn-**MnO2 battery** for high const. load discharging. The cycle life of a Zn-super-Fe(VI) **battery** is >150 times at 35% depth of discharge.
IT **7440-66-6, Zinc**, uses
(**anode**; alk. **Zn**-super-iron(VI) **batteries**)
RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

IT **13773-23-4**, Barium iron oxide (BaFeO4)
(cathode; alk. Zn-super-iron(VI) **batteries**)
RN 13773-23-4 HCA
CN Barium iron oxide (BaFeO4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Ba	1	7440-39-3
Fe	1	7439-89-6

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST alk super iron **battery zinc anode** ferrate cathode
IT **Battery** cathodes
Secondary **batteries**
(alk. Zn-super-iron(VI) **batteries**)
IT **7440-66-6, Zinc**, uses
(**anode**; alk. **Zn**-super-iron(VI) **batteries**)
IT 13718-66-6, Iron potassium oxide (FeK2O4) **13773-23-4**,

Barium iron oxide (BaFeO4)
(cathode; alk. Zn-super-iron(VI) **batteries**)

L35 ANSWER 3 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 136:250321 HCA Full-text
TI Alkaline zinc primary **battery** with hydrogen absorbing material cathode
IN Davis, Stuart M.; Wang, Enoch
PA The Gillette Company, USA
SO PCT Int. Appl., 13 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002025760	A2	20020328	WO 2001-US27430	200109 05
WO 2002025760	A3	20030912		
US 6489056	B1	20021203	US 2000-664068	200009 18
AU 2001087064	A5	20020402	AU 2001-87064	200109 05
EP 1358688	A2	20031105	EP 2001-966561	200109 05

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004509445 T 20040325 JP 2002-528865
200109
05
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US 2003049520 A1 20030313 US 2002-277354
200210
22
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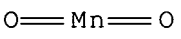
PRAI US 2000-664068 A1 20000918 <--
WO 2001-US27430 W 20010905 <--

AB An alk. **battery** has a cathode including a hydrogen absorbing material and an **anode** including **zinc** free of lead, mercury, or cadmium. The H-absorbing cathode material includes a Ni oxyhydroxide, a Cu oxide, a Ba permanganate, a chem. produced **MnO2**, a silver oxide, or a Ag permanganate.

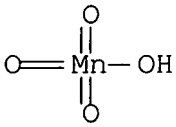
IT **1313-13-9**, Manganese dioxide, uses **7440-66-6**, Zinc, uses **7787-36-2**, Barium permanganate
(alk. zinc primary **battery** with hydrogen absorbing material cathode)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

RN 7787-36-2 HCA
CN Permanganic acid (HMnO4), barium salt (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M006-06
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST zinc **battery** hydrogen absorbing material cathode
IT Absorption
Primary **batteries**
(alk. zinc primary **battery** with hydrogen absorbing material cathode)
IT **Battery** cathodes
(hydrogen-absorbing; alk. zinc primary **battery** with hydrogen absorbing material cathode)
IT **1313-13-9**, Manganese dioxide, uses 1317-38-0, Copper oxide cuo, uses **7440-66-6**, Zinc, uses 7783-98-4, Silver permanganate **7787-36-2**, Barium permanganate 12026-04-9, Nickel hydroxide oxide niooh 20667-12-3, Silver oxide
(alk. zinc primary **battery** with hydrogen absorbing material cathode)
IT 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses
(alk. zinc primary **battery** with hydrogen absorbing material cathode)
IT 1333-74-0, Hydrogen, uses
(alk. zinc primary **battery** with hydrogen absorbing material cathode)

L35 ANSWER 4 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 136:186557 HCA Full-text
TI Hydroxide activated AgMnO4 alkaline cathodes, alone and in combination with Fe(VI) super-iron, BaFeO4
AU Licht, Stuart; Ghosh, Susanta; Naschitz, Vera
CS Department of Chemistry and Institute of Catalysis, Technion Israel Institute Of Technology, Haifa, 32000, Israel
SO Electrochemical and Solid-State Letters (**2001**), 4(12), A209-A212
CODEN: ESLEF6; ISSN: 1099-0062
PB Electrochemical Society
DT Journal
LA English
AB In principle, silver permanganate, AgMnO4, represents a substantial cathodic charge source for electrochem. storage, but exhibits poor charge transfer. This study presents a novel hydroxide activation of AgMnO4, as well as an active composite cathode of Fe(VI) (super iron) and AgMnO4. The Fe(VI) composite cathode contains BaFeO4, AgMnO4, and KOH. Evidence relates the hydroxide activation to a reaction intermediate, K2MnO4/AgO, which preserves the intrinsic AgMnO4 high charge capacity. Also presented is the high discharge energies resulting from these cathodic phenomena in alk. primary **batteries.** Cathodes included either AgMnO4 alone, 67% AgMnO4 with 33% KOH, or a composite of 39% AgMnO4, 12% KOH, and 49% BaFeO4 (barium super iron). Probed with a conventional alk. **zinc anode** in a AAA cylindrical configuration, AgMnO4 alone discharged to 0.8 Wh at 75 Ω, a value low compared to a conventional alk. **MnO2** discharge of 1.5 Wh.

The KOH or Fe(VI) activated cathode cells each discharge to 2.0 W; yielding a 2.5-fold increase in discharge capacity compared to the simple AgMnO4 cathode.

IT **13773-23-4**, Barium iron oxide BaFeO4
(hydroxide activated AgMnO4 alk. cathodes, alone and in combination with Fe(VI) super-iron, BaFeO4)

RN 13773-23-4 HCA

CN Barium iron oxide (BaFeO4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Ba	1	7440-39-3
Fe	1	7439-89-6

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery** cathode silver permanganate potassium hydroxide barium iron oxide

IT **Battery** cathodes
(hydroxide activated AgMnO4 alk. cathodes, alone and in combination with Fe(VI) super-iron, BaFeO4)

IT 1310-58-3, Potassium hydroxide, processes 7783-98-4, Silver permanganate **13773-23-4**, Barium iron oxide BaFeO4 14127-55-0, Iron 6+, processes
(hydroxide activated AgMnO4 alk. cathodes, alone and in combination with Fe(VI) super-iron, BaFeO4)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 5 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 126:34350 HCA Full-text

TI Alkaline **battery** having cathode containing titanate additive

IN Swierbut, Wendi M.; Nardi, John C.

PA Eveready Battery Company, Inc., USA

SO U.S., 5 pp.
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5569564	A	19961029	US 1995-479591	199506 07

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CA 2178422 A1 19961208 CA 1996-2178422
199606
06
<--
JP 09139201 A 19970527 JP 1996-143931
199606
06
<--
EP 747980 A1 19961211 EP 1996-304260
199606
07
<--
EP 747980 B1 19990811
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE
CN 1146640 A 19970402 CN 1996-110352
199606
07
<--
SG 72693 A1 20000523 SG 1996-10011
199606
07
<--
TW 409437 B 20001021 TW 1996-85109450
199608
05
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HK 1007407 A1 20000929 HK 1998-106310
199806
24
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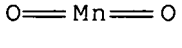
PRAI US 1995-479591 A 19950607 <--

AB A **battery** cathode includes a **MnO2** active material and a titanate additive, which includes BaTiO3 and/or K2TiO3. This cathode is esp. adapted for use in a **battery** having a **Zn anode** and an alk. electrolyte.

IT **1313-13-9**, Manganese oxide (**MnO2**), uses
(cathode of alk. **batteries** contg. barium titanate and/or potassium titanate additive)

RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **12047-27-7**, Barium titanate (BaTiO3), uses

(manganese dioxide cathode of alk. **batteries** contg. additive of)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM H01M004-50
INCL 424224000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** cathode manganese dioxide titanate additive; barium titanate additive manganese dioxide cathode; potassium titanate additive manganese dioxide cathode
IT **Battery** cathodes
(manganese dioxide contg. barium titanate and/or potassium titanate additive)
IT **1313-13-9**, Manganese oxide (**MnO2**), uses
(cathode of alk. **batteries** contg. barium titanate and/or potassium titanate additive)
IT 12030-97-6, Potassium titanate (K2TiO3) **12047-27-7**, Barium titanate (BaTiO3), uses
(manganese dioxide cathode of alk. **batteries** contg. additive of)

L35 ANSWER 6 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 125:91382 HCA Full-text
TI Additives for alkaline **batteries** having manganese dioxide cathodes
IN Davis, Stuart M.; Haines, Christopher P.; Leef, Alexander A.; Moses, Peter R.
PA Duracell Inc., USA
SO U.S., 4 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5532085	A	19960702	US 1995-518120	199508 22
			<--	
IL 117166	A	20000726	IL 1996-117166	199602 18
			<--	
ZA 9601298	A	19960827	ZA 1996-1298	

199602
19
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CA 2229564 A1 19970306 CA 1996-2229564
199603
29
<--

WO 9708770 A1 19970306 WO 1996-US4268
199603
29
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W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML

AU 9654343 A 19970319 AU 1996-54343
199603
29
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EP 852821 A1 19980715 EP 1996-911460
199603
29
<--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI

BR 9610196 A 19980811 BR 1996-10196
199802
19
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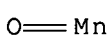
PRAI US 1995-518120 A 19950822 <--
WO 1996-US4268 W 19960329 <--

AB The invention relates to alk. **batteries** contg. manganese dioxide cathode active material. A substance selected from CaWO4, MgTiO3, BaTiO3, CaTiO3, ZnMn2O4, and Bi12TiO20 is added to the cathode of conventional alk. cells typically having an **anode** comprising **zinc** and cathode comprising manganese dioxide and an alk. electrolyte. The additive increases the service life of the cell.

IT **1313-13-9**, Manganese dioxide, uses
(additives for manganese dioxide cathodes in alk. **batteries**)

RN 1313-13-9 HCA

CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **12047-27-7**, Barium titanate (BaTiO3), uses
(additives for manganese dioxide cathodes in alk. **batteries**)
RN 12047-27-7 HCA
CN Barium titanium oxide (BaTiO3) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM H01M004-50
ICS H01M004-42
INCL 429224000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** manganese dioxide cathode additive; calcium tungstate additive manganese dioxide cathode; magnesium titanate additive manganese dioxide cathode; barium titanate additive manganese dioxide cathode; calcium titanate additive manganese dioxide cathode; zinc manganate additive manganese dioxide cathode
IT Cathodes
(**battery**, additives for manganese dioxide cathodes in alk. **batteries**)
IT **1313-13-9**, Manganese dioxide, uses
(additives for manganese dioxide cathodes in alk. **batteries**)
IT 7790-75-2, Calcium tungstate (CaWO4) 12032-30-3, Magnesium titanate (MgTiO3) 12032-94-9, Zinc manganate (ZnMn2O4) **12047-27-7**, Barium titanate (BaTiO3), uses 12049-50-2, Calcium titanate (CaTiO3) 12441-73-5, Bismuth titanate (Bi12TiO20)
(additives for manganese dioxide cathodes in alk. **batteries**)

L35 ANSWER 7 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 124:237217 HCA Full-text
TI Manufacture of nonaqueous electrolyte **batteries** with in situ alloyed anodes
IN Sato, Hiromi; Sadakuni, Sakae; Ooo, Fumio
PA Matsushita Electric Ind Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07335260	A	19951222	JP 1994-127746	

199406
09

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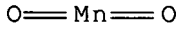
JP 3111807 B2 20001127
PRAI JP 1994-127746 19940609 <--

AB Li **batteries** using **MnO2** cathodes contg. 0.01-10 wt.% Al, In, Sn, Pb, Bi, Ga, Sr, Si, Zn, Cd, Ca, and/or Ba are prepd. by discharging 0.5-8.0% of the **battery** capacity and charging 0.1-2.0% of the capacity after assembling. The metal additives in the cathode form alloy with the Li anode during charge and discharge and render the **batteries** high discharge voltage.

IT **1313-13-9**, Manganese dioxide, uses
(manganese dioxide cathodes contg. metal additives for in situ alloying of lithium anodes in **batteries**)

RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)



IT **7440-39-3**, Barium, uses **7440-66-6**, Zinc, uses
(manganese dioxide cathodes contg. metal additives for in situ alloying of lithium anodes in **batteries**)

RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

IC ICM H01M010-40
ICS H01M010-44

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST **battery** lithium anode in situ alloying; manganese dioxide cathode lithium alloying metal

IT Anodes
(**battery**, manuf. of lithium alloy anodes by in situ

alloying of lithium with metal additives in cathodes in **batteries**)

IT Lithium alloy, base
(manuf. of lithium alloy anodes by in situ alloying of lithium with metal additives in cathodes in **batteries**)

IT **1313-13-9**, Manganese dioxide, uses
(manganese dioxide cathodes contg. metal additives for in situ alloying of lithium anodes in **batteries**)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-24-6, Strontium, uses 7440-31-5, Tin, uses **7440-39-3**, Barium, uses 7440-43-9, Cadmium, uses 7440-55-3, Gallium, uses **7440-66-6**, Zinc, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses
(manganese dioxide cathodes contg. metal additives for in situ alloying of lithium anodes in **batteries**)

IT 7439-93-2, Lithium, uses
(manuf. of lithium alloy anodes by in situ alloying of lithium with metal additives in cathodes in **batteries**)

L35 ANSWER 8 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 111:81314 HCA Full-text

TI Development of corrosion resistant zinc alloys for alkaline manganese dioxide **batteries**

AU Miura, Akira; Takata, Kanji; Okazaki, Ryoji; Ogawa, Hiromichi; Uemura, Toyohide; Nakamura, Yoshinobu; Kasahara, Nobuyoshi

CS Tech. Lab., Matsushita Battery Ind. Co., Moriguchi, 570, Japan

SO Denki Kagaku oyobi Kogyo Butsuri Kagaku (**1989**), 57(6), 459-64
CODEN: DKOKAZ; ISSN: 0366-9297

DT Journal

LA Japanese

AB About 200 Zn alloys, prepd. by combining 2 or 3 elements chosen from 15 additives, were used to evaluate H evolution from their powders in KOH electrolyte with regard to application as corrosion-resistant alloys in alk. **MnO2** dry **batteries.** The H evolution rate of a Zn base alloy at an amalgamation amt. of 1% Hg and contg. In 0.02, Pb 0.05, and Al 0.05% is the same as that of a Zn amalgam contg. 9% Hg. The effect of additive elements was elucidated in view of the high H overvoltage of the additive and the retardation of Hg diffusion into the Zn matrix.

IT **7440-39-3**, Barium, uses and miscellaneous
(zinc amalgam contg., hydrogen evolution from, for alk. manganese dioxide **battery** anodes)

RN 7440-39-3 HCA

CN Barium (CA INDEX NAME)

Ba

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST **battery** corrosion resistant **zinc anode**
; mercury **zinc** amalgam **anode battery**;
indium additive **zinc** amalgam **anode**; lead
additive **zinc** amalgam **anode**; aluminum additive
zinc amalgam **anode**
IT **Anodes**
(**battery**, **zinc** amalgam, contg. metal
additives, for alk. manganese dioxide **batteries**)
IT 39305-93-6
(anodes, contg. metal additives, for alk. manganese dioxide
batteries)
IT 1333-74-0P, Hydrogen, uses and miscellaneous
(evolution of, from zinc amalgam contg. metal additives, in
potassium hydroxide electrolytes, for manganese dioxide
battery anodes)
IT 7429-90-5, Aluminum, uses and miscellaneous 7439-92-1, Lead, uses
and miscellaneous 7439-95-4, Magnesium, uses and miscellaneous
7440-02-0, Nickel, uses and miscellaneous 7440-22-4, Silver, uses
and miscellaneous 7440-24-6, Strontium, uses and miscellaneous
7440-28-0, Thallium, uses and miscellaneous **7440-39-3**,
Barium, uses and miscellaneous 7440-43-9, Cadmium, uses and
miscellaneous 7440-55-3, Gallium, uses and miscellaneous
7440-69-9, Bismuth, uses and miscellaneous 7440-70-2, Calcium,
uses and miscellaneous 7440-74-6, Indium, uses and miscellaneous
(zinc amalgam contg., hydrogen evolution from, for alk. manganese
dioxide **battery** anodes)

L35 ANSWER 9 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 107:220567 HCA Full-text
TI Zinc alkaline **batteries**
IN Kasahara, Nobuyori; Uemura, Toyohide; Kagawa, Keiichi; Okazaki,
Ryoji; Takada, Kanji; Miura, Akira
PA Mitsui Mining and Smelting Co., Ltd., Japan; Matsushita Electric
Industrial Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 62176050 A 19870801 JP 1986-15764
198601
29
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JP 06028158 B 19940413
PRAI JP 1986-15764 19860129 <--

AB The anode active material of the title **batteries** is made of Zn alloys contg. In 0.005-0.5, Ba and/or Be 0.005-0.5, and Co and/or Ga 0.005-0.5%. Thus, a Zn-base alloy contg. 0.05% each of In, Ba and Co was pulverized in Ar stream, amalgamated to contain 1% Hg, and immersed in 40% KOH satd. with ZnO at 45° for 50 days. The amt. of evolved H was 0.04 mL/g, vs. 0.08 mL/g for Zn-5% Hg alloy. When discharged continuously at 20° through a 4-Ω load to 0.9-V cutoff, an alk. Zn-**MnO2 battery** using this alloy had a discharge time of 110% of that of a **battery** using a Zn-5% Hg alloy anode.

IT **111312-93-7 111312-94-8 111312-97-1**
(anodes, for alk. **batteries**, for hydrogen evolution suppression,)

RN 111312-93-7 HCA
CN Zinc alloy, base, Zn 98-99,Hg 1,Ba 0-0.5,Be 0-0.5,Co 0-0.5,Ga 0-0.5,In 0-0.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	98 - 99	7440-66-6
Hg	1	7439-97-6
Ba	0 - 0.5	7440-39-3
Be	0 - 0.5	7440-41-7
Co	0 - 0.5	7440-48-4
Ga	0 - 0.5	7440-55-3
In	0 - 0.5	7440-74-6

RN 111312-94-8 HCA
CN Zinc alloy, base, Zn 98,Hg 1,Ba 0.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	98	7440-66-6
Hg	1	7439-97-6
Ba	0.5	7440-39-3

RN 111312-97-1 HCA
CN Zinc alloy, base, Zn 98,Hg 1,In 0.5,Ba 0.2,Be 0.2,Co 0.2,Ga 0.2 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number

Zn	98	7440-66-6
Hg	1	7439-97-6
In	0.5	7440-74-6
Ba	0.2	7440-39-3
Be	0.2	7440-41-7
Co	0.2	7440-48-4
Ga	0.2	7440-55-3

IC ICM H01M004-42
ICA C22C018-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST **anode zinc** amalgam **battery**; indium
barium **zinc** amalgam **anode**; cobalt indium
zinc amalgam **anode**
IT **Anodes**
(**battery**, **zinc** alloy amalgam, for hydrogen
evolution suppression)
IT 104275-86-7 **111312-93-7 111312-94-8**
111312-95-9 111312-96-0 **111312-97-1** 111347-52-5
(anodes, for alk. **batteries**, for hydrogen evolution
suppression,)
IT 1333-74-0, Hydrogen, uses and miscellaneous
(suppression of evolution of, in **batteries**, zinc alloy
amalgams for)

L35 ANSWER 10 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 107:220565 HCA Full-text
TI Zinc alkaline **batteries**
IN Kasahara, Nobuyori; Uemura, Toyohide; Kagawa, Keiji; Okazaki, Ryoji;
Takada, Kanji; Miura, Akira
PA Mitsui Mining and Smelting Co., Ltd., Japan; Matsushita Electric
Industrial Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 62176049	A	19870801	JP 1986-15763	198601 29

<--

PRAI JP 1986-15763 19860129 <--

AB Zn alloys contg. Th 0.005-0.5; Co 0.005-0.5; and Be, Ba, and/or Cd) 0.005-0.5% are used as **anodes** for alk. **Zn batteries.** Thus, a Zn alloy contg. 0.05% each of Tl, Co, and Be was pulverized in Ar stream, amalgamated to contain 1% Hg, and immersed in 40% KOH satd. with ZnO at 45, for 50 days. The amt. of H evolved was 0.06 mL/g, vs 0.08 mL for a Zn-5% Hg alloy. An alk. Zn-**MnO2 battery** using an anode of the 1st alloy had a discharge time (at 20° through a 4-Ω load continuously to 0.9-V cutoff) of 110 h vs 100 h for a **battery** using a Zn-5% Hg alloy anode.

IT **111312-94-8 111378-03-1**
(anodes, for alk. **batteries**, for hydrogen evolution suppression)

RN 111312-94-8 HCA

CN Zinc alloy, base, Zn 98,Hg 1,Ba 0.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	98	7440-66-6
Hg	1	7439-97-6
Ba	0.5	7440-39-3

RN 111378-03-1 HCA

CN Zinc alloy, base, Zn 98,Hg 1,Co 0.5,Tl 0.5,Cd 0.3,Ba 0.1,Be 0.1 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	98	7440-66-6
Hg	1	7439-97-6
Co	0.5	7440-48-4
Tl	0.5	7440-28-0
Cd	0.3	7440-43-9
Ba	0.1	7440-39-3
Be	0.1	7440-41-7

IC ICM H01M004-42

ICA C22C018-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST **battery anode zinc** alloy amalgam; thallium **zinc** alloy amalgam **anode**; cobalt **zinc** alloy amalgam **anode**; beryllium **zinc** alloy amalgam **anode**; barium **zinc** alloy amalgam **anode**; cadmium **zinc** alloy amalgam **anode**

IT **Anodes**
(**battery**, **zinc** alloy amalgam, for hydrogen

evolution suppression)
IT 39305-93-6 104275-88-9 **111312-94-8** 111312-95-9
111378-01-9 111378-02-0 **111378-03-1**
(anodes, for alk. **batteries**, for hydrogen evolution suppression)
IT 1333-74-0, Hydrogen, uses and miscellaneous
(suppressing of evolution of, in alk. **batteries**, zinc alloy amalgams for)

L35 ANSWER 11 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 107:220547 HCA Full-text
TI Zinc alkaline **batteries**
IN Kasahara, Nobuyori; Uemura, Toyohide; Kagawa, Keiichi; Okazaki, Ryoji; Takada, Kanji; Miura, Akira
PA Mitsui Mining and Smelting Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62123654	A	19870604	JP 1985-262491	198511 25 <--
JP 03075983	B	19911204		

PRAI JP 1985-262491 19851125 <--
AB Zn alloys for use in the title **batteries** contain Pb 0.005-0.5, In 0.001-0.5, Al 0.005-0.5, and a total amt. of 0.0001-0.5% Be, Ca, Sr, and/or Ba. The alloys can be amalgamated. Appropriate amts. of metals were melted at 500°, atomized with 5 kg Ar/cm2, and amalgamated in 10% KOH to contain 1.0% Hg. When placed in contact with ZnO-satd. 40% KOH at 45° for 50 days, alloys of the invention generated 0.04-0.07 mL H/g vs. 0.08 mL H/g for Zn-5% Hg alloy. Alk. Zn-**MnO2 batteries** using alloys of the invention for anodes had discharge times of 101-107% of those of **batteries** using Zn-5% Hg alloy anodes when discharged through 4-Ω loads to 0.9-V cutoff.
IT **7440-39-3**, Barium, uses and miscellaneous
(anodes contg., aluminum-indium-lead-zinc amalgam, for hydrogen-evolution suppression in alk. **batteries**)
RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

Ba

IC ICM H01M004-42
ICA C22C018-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST **battery zinc** alloy amalgam **anode**; lead **zinc** alloy amalgam **anode**; aluminum **zinc** alloy amalgam **anode**; indium **zinc** alloy amalgam **anode**
IT **Anodes**
(**battery**, **zinc** alloy amalgam, for suppression of hydrogen evolution)
IT 7440-24-6, Strontium, uses and miscellaneous **7440-39-3**, Barium, uses and miscellaneous 7440-41-7, Beryllium, uses and miscellaneous 7440-70-2, Calcium, uses and miscellaneous
(anodes contg., aluminum-indium-lead-zinc amalgam, for hydrogen-evolution suppression in alk. **batteries**)
IT 111403-58-8
(anodes, for hydrogen-evolution suppression in alk. **batteries**)
IT 1333-74-0, Hydrogen, uses and miscellaneous
(suppression of evolution of, in alk. **batteries**, zinc alloy amalgams for)

L35 ANSWER 12 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 107:202202 HCA Full-text
TI Zinc alkaline **batteries**
IN Kasahara, Nobuyori; Uemura, Toyohide; Kagawa, Keiichi; Okazaki, Ryoji; Takada, Kanji; Miura, Akira
PA Mitsui Mining and Smelting Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 62176051	A	19870801	JP 1986-15765	198601 29 <--
JP 06028159	B	19940413		
PRAI JP 1986-15765		19860129 <--		

AB Zn-base alloys contg. In and/or Th 0.005-0.5, Pb (Cd and/or Ga) 0.005-0.5, Li (Na and/or Ba) 0.005-0.5, and Ni and/or Co 0.005-0.5% are used as **anodes** for alk. **Zn batteries** . Thus, a Zn alloy contg. 0.05% each of In, Pb, Li and Ni was pulverized in Ar stream, amalgamated to contain 1% Hg, and immersed in ZnO-satd. 40% KOH at 45° for 50 days. The amt. of evolved H was 0.04 mL/g vs. 0.08 mL/g for Zn-5% Hg alloy. When discharged continuously at 20° through a 4-Ω load to 0.9-V cutoff, an alk. Zn-**MnO2 battery** using this alloy had a discharge time of 110% of that of a **battery** using a Zn-5% Hg alloy anode.

IT **111312-94-8 111312-98-2**
(anodes, for alk. **batteries**, for hydrogen evolution suppression)

RN 111312-94-8 HCA

CN Zinc alloy, base, Zn 98,Hg 1,Ba 0.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	98	7440-66-6
Hg	1	7439-97-6
Ba	0.5	7440-39-3

RN 111312-98-2 HCA

CN Zinc alloy, base, Zn 97-99,Hg 1,Ba 0-0.5,Cd 0-0.5,Co 0-0.5,Ga 0-0.5,In 0-0.5,Li 0-0.5,Na 0-0.5,Ni 0-0.5,Pb 0-0.5,Tl 0-0.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Zn	97 - 99	7440-66-6
Hg	1	7439-97-6
Ba	0 - 0.5	7440-39-3
Cd	0 - 0.5	7440-43-9
Co	0 - 0.5	7440-48-4
Ga	0 - 0.5	7440-55-3
In	0 - 0.5	7440-74-6
Li	0 - 0.5	7439-93-2
Na	0 - 0.5	7440-23-5
Ni	0 - 0.5	7440-02-0
Pb	0 - 0.5	7439-92-1
Tl	0 - 0.5	7440-28-0

IC ICM H01M004-42

ICA C22C018-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST **anode zinc** amalgam **battery**; lead

lithium **zinc** amalgam **anode**; nickel indium **zinc** amalgam **anode**

IT **Anodes**
(**battery**, **zinc** alloy amalgams, for hydrogen evolution suppression)

IT 104275-86-7 104275-87-8 104275-88-9 **111312-94-8** 111312-95-9 **111312-98-2** 111312-99-3 111313-00-9 111313-01-0 111313-02-1 111313-03-2 111313-04-3
(anodes, for alk. **batteries**, for hydrogen evolution suppression)

IT 1333-74-0, Hydrogen, uses and miscellaneous
(suppression of evolution of, in alk. **batteries**, zinc alloy amalgams for)

L35 ANSWER 13 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 105:122976 HCA Full-text

TI Zinc alkaline **battery**

IN Miura, Akira; Takata, Kanji; Okazaki, Ryoji; Uemura, Toyohide; Kagawa, Keiichi

PA Matsushita Electric Industrial Co., Ltd., Japan; Mitsui Mining and Smelting Co., Ltd.

SO Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 185497	A1	19860625	EP 1985-308930	198512 09
		<--		
EP 185497	B1	19880420		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
JP 61140062	A	19860627	JP 1984-262135	198412 12
		<--		
JP 61140065	A	19860627	JP 1984-262138	198412 12
		<--		
JP 61181068	A	19860813	JP 1985-20372	198502 05

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JP 03065619 B 19911014
JP 61181069 A 19860813 JP 1985-20373
198502
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JP 03065620 B 19911014
JP 62090852 A 19870425 JP 1985-230159
198510
16
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JP 06022118 B 19940323
JP 62090854 A 19870425 JP 1985-230161
198510
16
<--
JP 01043429 B 19890920
JP 62090857 A 19870425 JP 1985-231599
198510
17
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JP 03065623 B 19911014
AU 8551012 A 19860619 AU 1985-51012
198512
09
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AU 558729 B2 19870205
CN 85109759 A 19860716 CN 1985-109759
198512
11
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CN 1004391 B 19890531
US 4861688 A 19890829 US 1987-29343
198703
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PRAI JP 1984-262135 A 19841212 <--
JP 1984-262138 A 19841212 <--
JP 1985-20372 A 19850205 <--
JP 1985-20373 A 19850205 <--
JP 1985-230159 A 19851016 <--
JP 1985-230161 A 19851016 <--
JP 1985-231599 A 19851017 <--
US 1985-804821 A1 19851205 <--

AB The title **battery** uses **MnO2**, Ag2O, etc. cathodes and **anodes** of **Zn** alloys contg. Ni 0.01-0.5; In, Pb, Ga, and/or Cd 0.01-0.5; and optionally Al, Mg, Ca, Ba, and/or Sr 0.05-0.2%. The use of these alloys

decreases the amt. of Hg used in manuf. of a low-pollution Zn alk. **battery** and for amalgamation of the anode surface for corrosion inhibition. Thus, various amalgamated (1.5%) Zn alloys according to the invention were prepd. and evaluated in button-type Ag2O **battery** for discharge performance, change in total height, and no. of **batteries** showing leakage after standing at 60° and 90% relative humidity for 1 mo. Superior results were demonstrated for these **batteries** vs. those having **anodes** of **Zn** amalgam contg. 0 or 1 addnl. element (0.01-0.1 Ni; 0.1% Pb, Ga, or Cd).

IT **7440-39-3**, uses and miscellaneous
(**anodes** from **zinc** amalgam contg., for leakproof and stable **batteries**)

RN 7440-39-3 HCA

CN Barium (CA INDEX NAME)

Ba

IC ICM H01M004-42
ICS C22C018-00

CC 72-3 (Electrochemistry)
Section cross-reference(s): 52, 56

ST **zinc** alloy **battery** **anode**; nickel indium **zinc** alloy **anode**; lead nickel **zinc** alloy **anode**; gallium nickel **zinc** alloy **anode**; cadmium nickel **zinc** alloy **anode**; aluminum nickel **zinc** alloy **anode**; magnesium nickel **zinc** alloy **anode**; calcium nickel **zinc** alloy **anode**; barium nickel **zinc** alloy **anode**; strontium nickel **zinc** alloy **anode**; amalgam lead nickel **zinc** **anode**; silver oxide zinc **battery** leakage

IT Anodes
(**battery**, indium-nickel-zinc alloy amalgam, manuf. and performance of)

IT 7439-95-4, uses and miscellaneous 7440-24-6, uses and miscellaneous **7440-39-3**, uses and miscellaneous 7440-70-2, uses and miscellaneous
(**anodes** from **zinc** amalgam contg., for leakproof and stable **batteries**)

IT 103917-10-8 103917-11-9 103917-12-0 103917-13-1 103917-14-2 103917-15-3 103917-16-4 103917-17-5 103917-18-6 103917-19-7 103917-20-0 103917-21-1 103917-22-2 104275-77-6
(anodes, for leakproof and stable **batteries**)

L35 ANSWER 14 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 104:158028 HCA Full-text

TI Rechargeable manganese(IV) oxide materials

AU Wroblowa, H. S.; Gupta, N.; Yao, Yung Fang
CS Ford Res. Staff, Dearborn, MI, USA
SO Battery Material Symposium, [Proceedings] (**1985**), 2nd, 203-19
CODEN: BMSPEW
DT Journal
LA English
AB A discussion is given on the improvement of rechargeable properties of modified **MnO2** electrodes in the absence of complications introduced by the presence of zincate ions leading to the formation of haeterollite. Phys. modified materials were prepd. by admixing foreign metal (M) oxides to Mn oxides. The M/Mn molar ratios varied between 0.01 and 0.25. Among the metals ions used were those of Al, Ag, Ba, Bi, Ca, Ce, Cu, K, La, Mn, Na, Pb, Sb, Sn, Y, Zn; of these, Ba2+ and Sb3+ imparted a rechargeability somewhat better than that obsd. for nonmodified γ-**MnO2** electrodes. The nature of the rechargeability of modified materials requires further study.
IT **1313-13-9**, uses and miscellaneous
(cathodes, rechargeability of, metal additive effect on)
RN 1313-13-9 HCA
CN Manganese oxide (MnO2) (CA INDEX NAME)

O═Mn═O

IT **7440-39-3**, uses and miscellaneous **7440-66-6**, uses and miscellaneous
(manganese dioxide **battery** cathodes contg., rechargeability in relation to)
RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

Ba

RN 7440-66-6 HCA
CN Zinc (CA INDEX NAME)

Zn

CC 72-3 (Electrochemistry)
IT Cathodes
(**battery**, manganese dioxide, rechargeability of, metal

additive effect on)
IT **1313-13-9**, uses and miscellaneous
(cathodes, rechargeability of, metal additive effect on)
IT 7429-90-5, uses and miscellaneous 7439-91-0, uses and miscellaneous 7439-92-1, uses and miscellaneous 7439-96-5, uses and miscellaneous 7440-09-7, uses and miscellaneous 7440-22-4, uses and miscellaneous 7440-23-5, uses and miscellaneous 7440-31-5, uses and miscellaneous 7440-36-0, uses and miscellaneous **7440-39-3**, uses and miscellaneous 7440-45-1, uses and miscellaneous 7440-50-8, uses and miscellaneous 7440-65-5, uses and miscellaneous **7440-66-6**, uses and miscellaneous 7440-69-9, uses and miscellaneous 7440-70-2, uses and miscellaneous
(manganese dioxide **battery** cathodes contg., rechargeability in relation to)

=> D HIS L36-

FILE 'HCA' ENTERED AT 13:14:26 ON 02 AUG 2007
L36 1073 S (ZINC# OR ZN)(3A)MNO2
L37 827 S L8 AND L36
L38 4 S L37 AND (L9-L12)
L39 12 S L37 AND L24
L40 5 S (L38 OR L39) NOT (L33 OR L34 OR L35)
L41 3 S 1840-2004/PY,PRY AND L40

=> D L41 1-3 BIB ABS HITSTR HITIND

L41 ANSWER 1 OF 3 HCA COPYRIGHT 2007 ACS on STN
AN 139:119832 HCA Full-text
TI Chemical synthesis of ferrate iron(VI) and its electrochemical properties
AU Pan, Jun-qing; Sun, Yan-zhi; Wan, Ping-yu; Chen, Yong-mei; Liu, Xiao-guang
CS College of Science, Beijing University of Chemical Technology, Beijing, 100029, Peop. Rep. China
SO Beijing Huagong Daxue Xuebao, Ziran Kexueban (**2003**), 30(2), 97-100
CODEN: BHDXAA; ISSN: 1671-4628
PB Beijing Huagong Daxue Xuebao, Ziran Kexueban Bianji Weiyuanhui
DT Journal
LA Chinese

AB High-purity potassium and barium ferrate were prepd. by alk. oxidn. of Fe(OH)3 with hypochlorite. The const. current discharge properties of BaFeO4 and K2FeO4 cathodes were studied. The high load discharge properties of the Zn **batteries** based on BaFeO4 and K2FeO4 cathode were investigated. Exptl. results indicate that the discharge capacity of BaFeO4 and K2FeO4 cathode is 0.56-1.16 times higher than that of conventional electrolytic MnO2 cathode under low, medium, and high const. load discharge. The discharge time of the Zn **batteries** with BaFeO4 and K2FeO4 cathode is longer than that of std. **Zn/MnO2** during high const. load discharge.

IT **13773-23-4**, Barium ferrate (BaFeO4)
(prepn. and electrochem. properties of barium and potassium ferrate used as cathodes in zinc **batteries**)

RN 13773-23-4 HCA

CN Barium iron oxide (BaFeO4) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Ba	1	7440-39-3
Fe	1	7439-89-6

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST barium ferrate prepn; potassium ferrate prepn; zinc **battery** ferrate cathode

IT **Battery** cathodes
Primary **batteries**
(prepn. and electrochem. properties of barium and potassium ferrate used as cathodes in zinc **batteries**)

IT 13718-66-6, Potassium ferrate (K2FeO4) **13773-23-4**, Barium ferrate (BaFeO4)
(prepn. and electrochem. properties of barium and potassium ferrate used as cathodes in zinc **batteries**)

L41 ANSWER 2 OF 3 HCA COPYRIGHT 2007 ACS on STN

AN 97:185340 HCA Full-text

TI Effect of sodium(+), potassium(+), ammonium, calcium(2+), and barium(2+) ions in manganese dioxide deposits on the electrical characteristics of manganese-zinc **batteries**

AU Dzhaparidze, L. N.; Abashidze, E. I.; Kakuriya, L. Sh.

CS Inst. Neorg. Khim. Elektrokhim., Tbilisi, USSR

SO Izvestiya Akademii Nauk Gruzinskoi SSR, Seriya Khimicheskaya (**1982**), 8(1), 48-54
CODEN: IGSKDH; ISSN: 0132-6074

DT Journal

LA Russian

AB Effects of the title cations on the performance of **MnO2- Zn batteries** and the structure of MnO2 are reported, and the importance of leaching of the electrolytic MnO2 is emphasized.

IT **7440-39-3**, uses and miscellaneous
(cathodes contg., manganese dioxide, **battery**, performance and structure of)
RN 7440-39-3 HCA
CN Barium (CA INDEX NAME)

Ba

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST sodium effect manganese dioxide; potassium effect manganese dioxide; ammonium effect manganese dioxide; calcium effect manganese dioxide; barium effect manganese dioxide; **battery** manganese dioxide zinc
IT Cathodes
(**battery**, manganese dioxide, performance and structure of, effect of cations on)
IT 7440-09-7, uses and miscellaneous 7440-23-5, uses and miscellaneous **7440-39-3**, uses and miscellaneous 7440-70-2, uses and miscellaneous 14798-03-9, uses and miscellaneous
(cathodes contg., manganese dioxide, **battery**, performance and structure of)
IT 1313-13-9, uses and miscellaneous
(cathodes, **battery**, performance and structure of, effect of cations on)

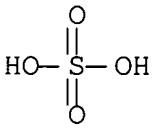
L41 ANSWER 3 OF 3 HCA COPYRIGHT 2007 ACS on STN
AN 13:14196 HCA Full-text
OREF 13:2814c-f
TI The commercial rating of pocket-flash-light **batteries.** (Leclanche cells.)
AU Lux, H.
SO Elektrotechnische Zeitschrift (**1919**), 40, 19-22
CODEN: ELZEAM; ISSN: 0424-0200
DT Journal
LA Unavailable
AB The manuf. of small **batteries** was an important item in Germany during the war. The scarcity of **MnO2**, and **Zn** and the tendency to market inferior **batteries** gave rise to stringent specifications which were drawn up by a union of flash-light-**battery** manufacturers. The situation today is better than before the war. The quality is very uniform today although it is conceded that **batteries** with an 8-hr. life have disappeared from the market entirely. According to the German specifications a new **battery**'s open-circuit voltage must not be less than 4.5 when detd. with a voltmeter of 100 ohm per volt resistance. When short-circuited through a resistance of 15 ohms the **battery** voltage must not be less than 3.9. The **battery** must have a life of 2.5 (grade B) to 3 (grade A) hrs. when discharged

continuously through 15 ohms a drop to 1.8 volts detg. end of "life." As regards the shelf test, the **battery** must show a potential of at least 3.4 volts when shorted through 15 ohms after 13 weeks. One of the standard types of cells has a Zn container 20 mm. in diam. by 55 mm. high. The C rod is 16 mm. in diam. by 40 mm. in length. Traces of Cu or Fe in the MnO2 or C rod tend to reduce the efficiency and life of **battery** considerably. Full details of tests are given. [Cf. also Ibid 40, 147 (1919).]

IT **7727-43-7**, Barium sulfate
(in accumulators, function of)

RN 7727-43-7 HCA

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



CC 4 (Electrochemistry)

IT Flash light
(**batteries**, com. rating of)

IT **7727-43-7**, Barium sulfate
(in accumulators, function of)

=> FILE REG
FILE 'REGISTRY' ENTERED AT 13:14:15 ON 02 AUG 2007

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FILE 'REGISTRY' ENTERED AT 12:32:38 ON 02 AUG 2007
E BARIUM SULFATE/CN
L1 1 S E3
E BARIUM HYDROXIDE/CN
L2 1 S E3
E BARIUM CARBONATE/CN
L3 1 S E3
E BARIUM OXIDE/CN
L4 1 S E3
L5 140 S (BA (L) O)/ELS (L) 2/ELC.SUB
E MANGANESE DIOXIDE/CN
L6 1 S E3
E ZINC/CN
L7 1 S E3

FILE 'HCA' ENTERED AT 12:37:45 ON 02 AUG 2007
L8 240274 S (BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR
L9 25682 S L1 OR BASO4
L10 16226 S L2 OR BA(W)OH(W)2
L11 16875 S L3 OR BACO3
L12 34815 S L4 OR L5 OR BAO
L13 40383 S L6 OR MNO2
L14 305280 S L7
L15 8146 S (ZINC# OR ZN)(2A)(ANOD## OR (NEG# OR NEGATIV?)(A)ELECTR
L16 55 S L8 AND (L9 OR L10 OR L11 OR L12) AND L13
L17 18 S L16 AND L14
L18 11 S L16 AND L15

FILE 'REGISTRY' ENTERED AT 12:42:44 ON 02 AUG 2007
E TITANIA/CN
L19 1 S E3

FILE 'HCA' ENTERED AT 12:44:15 ON 02 AUG 2007
L20 273899 S L19 OR TIO2 OR (TITANIUM# OR TI)(W)(OXIDE# OR DIOXIDE#)
L21 5 S (L17 OR L18) AND L20